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International Power & Paper Co. Shows Gain

Consolidated Gross Revenue in the Second Quarter of this Year Was $35,660,791 Compared with $31,652,682 in the Second Quarter of Last Year—Tonnage of Pulp and Paper During 1934 Continued to Run Ahead of Corresponding Months in 1933 Through the Month of May According to President Graustein

The International Paper and Power Company reports that consolidated gross revenue in the second quarter of this year was $35,660,791 compared with $31,652,682 in the second quarter of last year; consolidated net revenue including other income, before charges, was $10,705,040 against $9,850,224; and a net loss of $1,062,581 after all charges including depreciation, compared with a net loss of $1,535,417 in the second quarter of 1933.

In the first six months of this year consolidated gross revenue was $71,590,440 against $61,684,573 in the corresponding period of last year; net revenue including other income, before charges, was $21,701,871 compared with $19,267,882; and a net loss of $2,043,556 after all charges including depreciation, against a net loss of $3,774,490 in the first six months a year ago.

Comparative consolidated statements are as follows:

Quarter Ended June 30	1934	1933
Gross Revenue	$35,660,791	$31,652,682
Net revenue, including other income	10,705,040	9,850,224
Less: Int. and disc. on funded debt, other int., income taxes, sub. divs., and amounts applicable to minority stocks of subsidiaries	9,058,328	9,089,421
Depreciation and depletion	2,709,293	2,296,220
Net loss	1,062,581	1,535,417
Six Months Ended June 30	**1934**	**1933**
Gross Revenue	$71,590,440	$61,684,573
Net revenue, including other income	21,701,871	19,267,882
Less: Int. and disc. on funded debt, other int., income taxes, sub. divs., and amounts applicable to minority stock of subsidiaries	18,250,363	18,380,956
Depreciation and depletion	5,495,064	4,661,416
Net loss	2,043,556	3,774,490

In his remarks to shareholders, Archibald R. Graustein, president, says:

"Consolidated net loss during the second quarter this year was $1,062,581 as compared with loss of $1,535,417 for the second quarter of 1933. These losses are after provision for depreciation in the amount of $2,532,787 this year and $2,107,203 last year.

"Tonnage deliveries of pulp and paper during 1934 continued to run ahead of corresponding months in 1933 through the month of May. Deliveries in June, 1934, were 10% below those of June, 1933, but 30% ahead of June, 1932.

"Gross revenue from sale of power during the first half of 1934 showed an increase over 1933 but this was largely offset by higher costs and increased taxes although current figures do not yet reflect the full burden imposed on power subsidiaries by recent tax legislation.

"At June 30, 1934, consolidated notes payable amounted to $15,056,413 as compared with $18,552,262 at the year end."

Crown Willamette Declares Dividend

A dividend of $1 a share on first preferred stock, payable October 1 to stockholders of record September 13, has been declared by the Crown Willamette Paper company.

The annual meeting of stockholders resulted in the re-election of the following officers and directors: President, Louis Bloch; executive vice-presidents, A. B. Martin and J. D. Zellerbach; vice-president and treasurer, Thomas McLaren; vice-presidents, George P. Berkey, D. S. Denman, A. B. Lowenstein and R. A. McDonald; secretary, D. J. Goldsmith.

Old Colony Envelope Co. Busy

[FROM OUR REGULAR CORRESPONDENT]

WESTFIELD, Mass., August 28, 1934—The Old Colony Envelope Company of this city has shown a 40% gain in production the past few months as compared with the same period a year ago. Since July 1, business has been on about the same level as a year ago. The largest increase has been shown in booklet envelopes, indicating increased activity in the putting out of catalogues, sample books and various kinds of advertising matter. Since July 1, the plant has operated on a 30-hour week with about 225 hands employed.

Blue Eagle Restored to Bag Firms

[FROM OUR REGULAR CORRESPONDENT]

WASHINGTON, D. C., August 27, 1934—Three Philadelphia paper box firms, all owned by Samuel Simpkins (Simpkins Paper Box Manufacturing Company, National Paper Box Company, and Bell Paper Box Company) were instructed on May 22 to surrender their Blue Eagles. Since then the NRA Compliance Council has voted to restore the Eagle pending further investigation.

New Developments At Wisconsin Paper Mills

Niagara Groundwood Plant of Kimberly-Clark Corp. Being Rapidly Reconstructed—Changes Necessitated by Increased Demands—Badger Paper Mills, Peshtigo, Break Ground for New Two-Story Concrete and Steel Addition to House Waxing Department

[FROM OUR REGULAR CORRESPONDENT]

APPLETON, Wis., August 27, 1934—In order to meet the need for increased capacity in its converting department, Badger Paper Mills, Inc., Peshtigo, Wis., broke ground last week for a mill addition 68 by 160 feet. It will be two stories high, and of concrete and steel. The company is conducting the work by day labor instead of letting the job out on contract.

The building will house the waxing departments. Machines in the present waxing division will be moved into the new structure, and additional new and modern equipment will be added. The company also plans to add more employees when the facilities are enlarged. Work also is being completed on a new office building.

Reconstruction is proceeding rapidly on the groundwood mill of the Kimberly-Clark Corporation at Niagara, Wis. A crew of forty men is employed under the superintendency of E. W. Stridde. The improvement consists principally of extending the outside walls, and replacing the wooden roof with steel. The changes will take care of increased production demands.

The Niagara mill has been operating steadily on a six-day week basis, and on the basis of present contracts will maintain that schedule for some time to come. The company has added three new grades at this mill, and is finding its "Hyfect" brand popular and in big demand. The present output is approximately 100 tons daily on all grades. Although the water supply has been low, mill operations have not been impaired, as sufficient power has been purchased from Wisconsin Michigan Power Company to make up the deficiency.

Lace Paper Co. Speeds Output

Business of the Milwaukee Lace Paper Company, Milwaukee, Wis. is holding about the same level as last year. The company is converting 2,500,000 pounds of paper annually, and now has sixty articles on its production list. Most of the machinery has been designed and built by the company itself, and production was stepped up recently with a new high speed machine that embosses, prints, die-inks and folds thousands of napkins a minute.

Doilies are being turned out at the rate of 300,000 per machine daily, with 18 out of 25 machines constantly in operation. Eighty cup machines are turning out specialties for candy, nuts, cakes and souffle. The line also includes tablecloths and shelf paper, and a heavy run of frills for chops. The frills are rolled and pasted by hand, with the average employee turning out 2,500 an hour.

A staff of artists is maintained by the company constantly preparing new designs for these ornate specialties. One of the buildings of the Trostel Leather Company was purchased recently for general offices and warehouse, as part of the company's expansion program.

Labor Trouble Averted

Impending labor trouble at the Nekoosa-Edwards Paper Company, Nekoosa and Port Edwards, Wis., was averted last week through a conference with Finley F. Bell, mediator of the Chicago Regional Labor Board. He came to Port Edwards to meet representatives of the company, and of representatives of unions of the American Federation of Labor. The following statement was issued after the conference:

"The controversy between the Nekoosa-Edwards Paper Company and certain employees that are members of union labor organizations affiliated with the A. F. of L. has been happily terminated by reason of yesterday's conference.

"The company appreciates the mandatory provisions of Section 7 (a) of the N.R.A. and will bargain collectively with any group of the employees that desires to bargain collectively.

"The company and the union representatives being the minority group have amicably agreed after several hours of discussion to bring to the attention of the Chicago Regional Labor Board all future problems involving labor relations for the purpose of mediation, conciliation or arbitration."

It is reported that this step ends "hard feelings" of the last fifteen years during which the company would recognize as bargaining agent only the representatives of its own employees' organization, and not the A. F. of L. unions. The decision opens the way for the unions as well as the employees' organization to deal with the company. The A. F. of L. unions have chosen as their representative Raymond A. Richards, of Wisconsin Rapids, Wis., who is a member of the executive board of the Wisconsin State Federation of Labor. The company was represented in the negotiations by John E. Alexander, general manager. It is believed the present agreement will prevent any future strife.

New Pulp Making Process

Peter A. Paulson, of Appleton, Wis., consulting engineer for the paper industry, has been awarded a patent by the United States government on a pulp-making process. The application was made in November, 1932. The process has been installed successfully in a Detroit mill, and negotiations are under way with several other firms.

The method is for making wood pulp by the sulphite process, and comprises filling a digester forming one of a battery of digesters with wood chips and bisulphite liquor. The upper portion of the digester is brought in for free communication with the upper portions of the other digesters of the battery which are undergoing cooking. Steam is then passed into the digester at a predetermined constant rate until the contents thereof are brought to predetermined temperature, and thereafter passed into a digester at a lower constant rate to maintain the digester at a maximum temperature.

Mr. Paulson was associated with the Kimberly-Clark Corporation for many years, but has been engaged as a consulting engineer for the last three years.

Suit Against Nekoosa-Edwards Fails

Suit against the Nekoosa-Edwards Paper Company, Nekoosa, Wis., for alleged infringement of patent in the use of a special paper watermarking roller failed in federal district court at Superior, Wis., when Judge Patrick T. Stone ruled the American Lakes Paper Company had no claim for damages as a result of the Nekoosa company using a device similar to one they control.

The device is known as Seaborne roller. The American Lakes Company had been assigned the rights. The method reduced the cost from $5.70 a ton to 25 cents. The Nekoosa device was held to be sufficiently different so as not to be an infringement, Judge Stone decided.

News of the Industry

Losses of several thousand dollars were incurred by the Marathon Paper Mills Company at its tissue mill at Ashland, Wis., on the night of August 18, when a storm of hurricane proportions struck the city. A cupola was blown over and a portion of the mill roof was torn off. Large quantities of paper in process and in storage were damaged by the rain flooding into the mill. A carload of paper was blown down the railroad tracks at terrific speed but was stopped by obstructions.

A pulp hoist erected last spring by Superior Spruce, Inc., was demolished. The hoist was used to reload pulpwood rafted across Lake Superior on to railroad cars for shipment to Rhinelander Paper Company and other mills.

A raft of approximately 8,000 cords of pulpwood enroute across Lake Superior in tow of the tug *Butterfield* for the Consolidated Water Power and Paper Company was buffeted about during the storm, but was towed into port with only a small loss of wood. Six rafts have been brought across, and about 16,000 cords remain in the boom to be loaded on cars. Shipping will be completed about the first week in October.

Executives and engineers of paper mills along the Wisconsin river held a meeting last week to consider the serious situation now existing relative to water power. Flow in the Wisconsin river is now at the lowest point in history due to the lack of heavy rainfall. Eighteen large reservoirs which usually provide a normal flow during dry spells are down to 20 per cent of their storage capacity. Unless heavy rains occur during the next five weeks, water power will have to be abandoned. The flow, if the reservoirs give out, will be down to 500 cubic feet per second, whereas at times it has been as high as 60,000 cubic feet. Mills have had to buy heavy quantities of current from power companies, causing a greatly increased operating expense.

Charging that rates on printing, wrapping and writing paper between mills located in northern Wisconsin and eastern cities are exorbitant, the Wisconsin Paper and Pulp Manufacturers' Traffic Association has asked the Interstate Commerce Commission to make a thorough investigation. The association is composed of twenty-one paper manufacturers and names practically every eastern railroad in its request for a checkup of tariffs and a revision of rates.

E. W. Tinker, regional U. S. forester at Milwaukee, Wis., announces that the greatest tree planting program in history will be started this fall in Wisconsin, Minnesota and Michigan. Approximately 172,500,000 trees will be placed on 175,000 acres, of which 58,000 will be in Wisconsin. Six federal nurseries will furnish saplings. The nursery at Rhinelander, Wis., will furnish 20,000,000, and the newly acquired nursery at Butternut, Wis., 1,500,000 saplings.

Paper manufactured by the Mosinee Paper Mills Company, Mosinee, Wis., is being used in putting up an emergency silo in a demonstration at Wausau, Wis. The silo will be put up with snow fence, and if loaded properly will stand solidly so as to hold the feed. The idea has been encouraged among drought-affected farmers who were able to raise large acreages of corn as an emergency feed supply for the coming winter.

Immense quantities of lime sludge at the Nekoosa-Edwards Paper Company, Nekoosa, Wis., will be distributed to farms within a 25-mile radius under approval granted by the government to make this an FERA project. The government will pay for the hauling, and will pay half of the cost of the material. The sludge is beneficial to sour soil.

Wisconsin will be represented by a large delegation at the annual convention of the Technical Association of the Pulp and Paper Industry at Portland, Oregon, September 10 to 13. Copies of the program have been received by the mills, and most of them will be represented by at least one delegate.

When the Vultee plane of the New York-Moscow-London Air Lines, Inc., made its first flight of air express on Aug. 25, it carried letters from Menasha Products Company, Menasha, Wis., the carton division of the Marathon Paper Mills Company, to each of its customers in the countries covered. The evergreen tree insignia, the company's trade-mark, was emblazoned on each side of the plane. Its products are used at the present time in England, Belgium, Cuba, Hawaii, and other countries.

Employees of paper mills at Kaukauna, Wis. will hold a picnic Labor Day at LaFollette park under auspices of Kaukauna local No. 147, Pulpmakers' Union. A huge parade will be held, followed by an afternoon of amusements, contests and band concerts.

Sylvester Sitter won the championship in the golf tournament sponsored this summer by employees of the Menasha Products Company, Menasha, Wis. He defeated Russel C. Flom in the first flight of the final tournament, and was awarded a driver as first prize.

Arnold Torkelson and Edward Sutherland were burned seriously in an accident at the Tomahawk Kraft Paper Company, Tomahawk, Wis., last week. A furnace exploded at the mill, but caused no damage. The two men are confined to the hospital.

Peter J. Reitzner, who had been a paper maker for the Thilmany Pulp and Paper Company, Kaukauna, Wis., for more than twenty years, died at his home at Appleton, Wis. on August 23. For a time he served as assistant superintendent of the company's mill at Niagara Falls, N. Y. He was 38 years old, and a veteran of the World War.

Waste Material Trades Stand 27th

Charles M. Haskins, managing director of the National Association of Waste Material Dealers, Inc., points out in a statement recently released that according to charts just issued by the American Trade Association Executives the Waste Material Industry appears as No. 27 on the chart entitled "The Forty-six Largest Approved Codes." In other words, out of 500 codes approved the waste material trade in number of employees stands No. 27 on the list. The same chart shows the number of units in the trade as 10,000.

Mr. Haskins points out that it is not likely that a code ranking so near the top both in employees and units will be allowed to escape any of the obligations of other trades of its size. Present indications are that budgets for all the Code Authorities involved will shortly be approved and that the various Code Authorities will be working in a harmonious manner.

Sabin Robbins Absorbs Dwyer Paper Co.

The Chicago division of the Sabin Robbins Paper Company has absorbed the L. T. Dwyer Paper Company, which is in the same line of business, handling job lots of paper.

A portion of the L. T. Dwyer organization will become affiliated with the Chicago division of the Sabin Robbins Paper Company.

Chicago Paper Market Exhibits Stronger Trend

While Demand for Various Standard Grades of Fine Paper Continues Light, Inquiries for Future Account Are Fairly Numerous—Better Retail Business Situation Increases Request for Wrapping Papers—Waste Paper Market Becoming More Lively

[FROM OUR REGULAR CORRESPONDENT]

CHICAGO, Ill., August 27, 1934—Reports of improvement in the paper industry in general are more or less substantiated by local commentators on the market situation. The increasing volume of advertising lineage in both newspapers and magazines has had a corresponding salutary effect on the local paper industry, while improved retail business (which has however, slackened noticeably in the past month) has increased the market for wrapping paper. Prices, as has been commented upon here, have risen materially, with the single exception of the newsprint, which is giving the Chicago representation of the industry a real headache.

As the Fall season opens inquiries in the Chicago market are reported to have increased materially, although the majority of these inquiries have not as yet developed into actual orders. This situation is reported as noticeably prevalent in the groundwood market. Fine papers were fairly quiet during the week as far as actual sales were concerned, although more interest among prospective consumers was registered. Opinion seems to be growing that the Fall season will be late this year and that a real pickup may not be experienced until early Spring. However, the paper industry has improved its position for the most part, so that it can immediately capitalize on any improved trend. Such is the condition reported in kraft, otherwise comparatively dull, in books and covers and particularly in paperboard, where exhaustive efforts to uncover new markets seem to be bearing fruit. The waste paper market was a bit more lively during the week.

Watervliet Paper Mill Reopens

Chicago paper men were much interested in the news that the paper mill of the Watervliet Paper Company, Watervliet, Mich., was scheduled to reopen on August 21 after a five-week strike. Accounts coming from Benton Harbor said that the mill, which manufactures coated book papers, would reopen following a shutdown since July 16 when 350 workers struck, asking more wages and better working conditions. The strike was called after the formation of a new union. "We are going to open the mill Tuesday" was the notice reported to have been sent to each mill worker. "If you want a job let us know and you can have it. A wage scale will be posted at the mill. Do not be afraid of union leaders. We want Watervliet men to have the jobs and are not inporting other workers." Latest reports were that the plan succeeded and that the mill was again producing. Inasmuch as Watervliet is less than sixty miles from Chicago and since the situation there might have an effect on nearby mills, Chicago paper men were keenly interested in the strike and will continue to be so until the situation is satisfactorily settled.

Northwestern Superintendents to Meet

The Fall meeting of the Northwestern Division of the American Pulp and Paper Mill Superintendents Association will be held at Wausau, Wis., the dates being September 21 and 22. Under the guidance of Grover Keeth, chairman of the Northwestern Division, a splendid program is being developed and a number of Chicago executives are certain to make good use of the opportunity to attend the sessions. It is reported that finishing room practices in relation to paper making will provide the basis for much discussion and analysis. Members of the association are expected to attend along with superintendents and mill managers in Wisconsin and neighboring states.

Joe Pirie Discusses Code Situation

It may be that Joe Pirie, code authority in this territory, may have the honor of being the final speaker on the Salesmen's Association programs held at the Hamilton Club. At least, following the speaking appearance of the code authority on August 13, the Middle West Division transferred its Monday luncheons to the Palmer House after many years patronage of the Hamilton Club. Whether or not the arrangement will be permanent is as yet to be decided but for the next week or two, it is understood, the third floor of the Palmer House will be the site of these interesting weekly luncheons. Mr. Price incidentally, did a splendid job a week ago of outlining the code situation and of discussing several matters whch had been somewhat perplexing to the association.

Paper Salesmen Hold Record Golf Outing

It was coming sooner or later. The news that the Middle West Division of the Salesmen's Association of the Paper Industry had broken attendance records at its monthly golf outings. Over sixty members and guests hiked out to Knollwood on August 17 to hang up a new record and have "the best time of all" under the guidance of golf chairman R. R. Cook. The course, one of the nine "AA" courses in the district, was mighty popular, while the fine swimming pool further helped to entertain the guests. The tournament was also a bit different in that it was a flag event, won by Courtney Reeves on the nineteenth hole. Herman Berge was second, while consolation prizes went to George Morns and H. F. Pfister. The members had other prizes to shoot at as well, the winners following:

Low Gross, F, Haggerty; low net, 17 and under, H. T. Johnson; low net 18 and over, H. C. Christenson; low net first nine, Al Weisner; second nine, R. C. Johnson; low putts, F. Huff; low putts first nine, C. Rasmussen; second nine, H. F. Leahy; low putts foursome, Bill Tilden, H. R. Knott, C. Abrahamson and H. F. Leahy; blind bogey, C. Shannon; consolation blind bogey, H. F. Leahy, L. C. Ferris, C. R. Whitelaw and H. Berge; high putts foursome, C. Shannon, N. Altmann, H. F. Pfister and H. Berge; high gross foursome, L. C. Ferris, W. Snellings, C. Trost and W. Shea; high gross one hole, W. Shea; SAPEYE cup, F. Huff; low score par three hole, P. Wesco and low score par five, W. B. Moore. Court Reeves and Warren Moore donated the par three hole prize.

State Paper Association's Fine Work

An organization which has done a remarkably fine job during the past year and which perhaps hasn't received the publicity it deserves is the Illinois State Paper Association, made up of firms from the cities of Springfield, Danville, Joliet, Rockford, Quincy, Peoria, Rock Island and Elgin. The association is composed of members who are affiliated with the National Paper Trade Association and has done a fine piece of work in cooperating with the as-

sociation, particularly in the kraft and twine divisions, and in working with the code authority. R. A. Pilcher, Pilcher Paper Company, Joliet, is president. C. E. Roach, Capital City Paper Company, Springfield, vice president, and Anna Wilson, John C. Streibich Company, Peoria, treasurer, complete the executive personnel of the rapidly expanding association.

News of the Trade

If it is true that every man is a boy at heart then the cover of the "Friendly Adventurer," published by Bermingham & Prosser, should speed up attention in the interesting house organ. The August cover is a "circus cover" with pen sketches of just about every circus attraction. Following up the cover, the first article discusses some of the things P. T. Barnum did in the way of merchandising and advertising that are certain to be worth while reading. The rest of the eight page booklet, with the exception of one unobtrusive advertisement on the third cover, is composed of interesting discussions on various topics—not business.

The Illinois Testing Laboratories recently issued Bulletin 1726 describing the Alnor Pyroll Pyrometer for measuring surface temperatures of revolving rolls and driers. The Laboratories have also published Bulletin 1727 covering Alnor Pyrocan Combination Pyrometer and type 1755 Pyrometer for measuring surface temperatures of flat surfaces, etc.

The Fick Paper Company is greatly expanding its floor space in the Western Warehouse Building at 323 West Polk street. The company, which was organized in November of 1931, has leased an additional 20,000 square feet, according to V. C. Goodhue, general sales manager. The additional space is reported to have been made necessary to accommodate the salesmen being added to the firm's personnel and to provide more storage space.

Heavy Standard Bronze Gate Valve

The Kennedy Valve Manufacturing Company has placed on the market a new Heavy Standard Bronze Gate Valve designed for 150 lb. working steam pressure and 250 lb. working water, oil or gas pressure. This valve, known as Fig. 23, has all the special features of design which were recently incorporated in the Kennedy Fig. 27 Standard Bronze Gate Valve but is heavier throughout to withstand the higher working pressures for which it is intended.

One of the outstanding features of these new valves is the large bonnet hex which is placed close to the body to make the entire valve more rigid and also to assist easier removal of the bonnet and stem assembly when the valve is installed with close clearances.

Another important feature is the design of the stem which is made of specially tough bronze, has an unusually large number of heavy contact threads, and has a flexible connection between the stem head and the disc, making stripping of threads almost impossible and prolonging the life of the valve.

Additional features are the deep stuffing box with specially selected high graphite molded packing rings, bronze gland and heavy packing nut, the substantial non-heating non-slipping handwheel, and the heavy pipe end hexes.

These valves are built in a complete range of sizes up to 3 in., and additional information can be obtained by addressing the Kennedy Valve Manufacturing Company, Elmira, New York.

Columbia River Makes Profit

[FROM OUR REGULAR CORRESPONDENT]

VANCOUVER, Wash., August 23, 1934—F. W. Leadbetter, president of the Columbia River Paper Company of Delaware, in submitting his report under date of August 2, 1934, to the stockholders of the company, makes the following statement:

"The Company herewith submits balance sheets of December 31, 1933, of its subsidiaries, Columbia River Paper Mills, Oregon Pulp and Paper Company and California-Oregon Paper Mills (the Los Angeles plant of the Columbia River Paper Mills), and a comparative statement of income from operations of the three companies for the two years ended December 31, 1932 and 1933. These three companies, together with a part interest in the Columbia River Paper Company of Florida which prints and distributes citrus paper made at Vancouver, Washington, to the growers of grapefruit and oranges in Florida, comprise the operating paper mill properties controlled through common stock ownership by Columbia River Paper Co.

"On January 1, 1934, the entire bond issue of the California-Oregon Paper Mills was retired, the final payment of January 1, 1935, being anticipated and the bonds called, thus leaving this property entirely unencumbered.

"Under the arrangements with bondholders by which the maturities of bonds of Columbia River Paper Mills and Oregan Pulp and Paper Company were extended for a four-year period, nearly 97 per cent of the outstanding bonds of the Columbia River Paper Mills and more than 99 per cent of the outstanding bonds of Oregon Pulp and Paper Company were so extended. The relief afforded both of these companies by this extension of maturities has been most beneficial to the companies. All interest payments on the bond issues of both of these companies have been met.

"You will notice from the statement herewith that in 1933 the properties operated at a slight profit after all income charges, including depreciation, except the Columbia River Paper Mills at Vancouver, whose lumber operations were still very unprofitable.

"The combined mills have reduced their current liabilities and increased their current assets. All mills have reduced their notes and acceptances payable, in addition to the reduction in outstanding bonds heretofore mentioned and neither Columbia River Paper Mills nor Oregon Pulp and Paper Company now has any bank indebtedness.

"Betterment in operating conditions as shown last year has occurred since the first of January, but at the present writing the mills are again operating only part time but maintaining themselves in a current position that enables them to still take care of all immediate requirements.

"We have delayed this report to include the preliminary estimate for the first six months period of 1934, which shows all of the mills have made a small profit after depreciation and all other charges. In addition to the mills proper the same good results have occurred at the Florida plant.

Finnish Newsprint More Active

The Finnish paper market is somewhat more lively as regards newsprint, according to the Forest Products Division of the Department of Commerce. In the thin printing and wrapping fields, however, the usual summer dullness continues. Prices are holding steady. The wood pulp market is dull with a few sales being made at prices which have been in effect for some time. The mechanical groundwood mills are reported to have orders on their books which will insure operation up to the end of the year.

Demand for Paper Slightly Better In Boston

Fine Paper Market Displays More Activity, With Bond, Ledger and Book Papers In Greater Request Than of Late—Movement of Wrapping Paper Into Consumption Well Sustained —Box Board Business Holding Up Well—Paper Stock Steady to Firm

[FROM OUR REGULAR CORRESPONDENT]

BOSTON, Mass., August 27, 1934—More paper houses here reported a little better business last week than the previous week, but a few continue to intimate a lack of much activity. It is expected that the atmosphere will improve still further within the coming month or so. Sales are slightly larger in fine paper, including bonds, ledgers and book papers. The situation is favorable in parchment papers. Generally speaking, the market for wrapping papers is holding up well for the season, with "a little something doing" all the time, at least among some houses. Buying for Fall business has not begun yet, as distributors are waiting for lower prices, but manufacturers are holding firm, according to a representative of one of them. Box board business is holding up fairly well, with possibly a slight improvement. The demand for supplies for shoe boxes continues strong.

The paper stock market is just a shade better than it has been for some time. More inquiries are coming into the market, with buyers looking out for their Fall requirements. Minimum prices of mixed papers and old newspapers f.o.b. Boston have been adjusted according to those decided upon by Code officials, so that the lowest quotation for No. 1 mixed papers is .35 and that for ald newspapers, .45. The minimum Code rate is .32½ and .42½ ex packers' door, but in cases where cartage is necessary to the railroad car, a charge must be made for this expense. It is expected that prices of other grades of old papers will react to the advance brought about according to the Code. In fact, over issue news has already gone up, registering at .50 @ .52½, compared with a previous range of .45 @ .50. A little improvement developed in the demand for grades which have been marked up. White blank news also advanced to 1.00 @ 1.10 against a previous quotation of .95 @ 1.05, and corrugated boxes to .37½ @ .40, compared with a former range of .32½ @ .35. No. 1 Kraft went down to 1.05 to 1.10 from 1.10 @ 1.20. In bagging, foreign manila rope declined to 1.85 @ 2.00, from 2.00 @ 2.12½, but new burlap cuttings rose to 1.75 @ 1.85 from 1.25 @ 1.50.

Twine was quiet. The cotton market was strong, but consumers were apparenty well supplied on all grades of cotton twine, as well as others.

News of the Trade

The first dividend from receivers of the Geo. W. Wheelwright Paper Company, is expected to be received in the trade within a few days. This payment is the first in the liquidation of the Wheelwright company. Five payments in all will be made at intervals.

Jamie W. Stepp, manager of the printing paper department of the Brown Company, Portland, Me., will leave Boston tomorrow for Los Angeles and will hold sales meetings with Blake, Moffitt & Towne, who have recently taken on the complete line of printing papers made by the Brown Company. Meetings will be held in San Diego, Long Beach, Los Angeles, San Jose, San Francisco, Oakland and Sacramento, California; Medford, Salem and Portland, Oregon; Yakima, Spokane, Tacoma and Seattle, Washington; Boise, Idaho, and Phoenix and Tucson, Arizona.

Charles A. Esty, president, and Hubert L. Carter, treasurer, of Carter Rice & Co., Corp., have returned from the meeting held for distributors of the Hammermill Paper Company at Erie, Pa., August 22 and 23.

J. Harry Ellis, manager of the wrapping paper department of Carter Rice & Co., Corp., has returned from a vacation at South Harwich, Cape Cod.

Joseph T. Daly, head of the Chicago branch of the American Writing Paper Company, is visiting his many friends in Boston, accompanied by his wife and children.

Charles I. Foster, manager of the New England office of the American Writing Paper Company, left Friday for a two weeks' vacation at Mount Wayne, Me., accompanied by his wife and son. He expects to fish for bass.

Harrie E. Waite, merchandise manager for John Carter & Co., Inc., is expected to return this week from a visit to his son, Walter Waite, on Long Island, and a trip to Lake George and Lake Seymour, Vt.

G. E. Emerson, treasurer of E. Butterworth & Co., Inc., has returned from a vacation at Osterville, Cape Cod, accompanied by his family.

Henry Ford, manager of the fine paper specialties department of the Andrews Paper Company, left for New York Saturday evening on a business trip.

H. D. Carruthers, of the Collins Manufacturig Company, North Wilbraham, Mass., and A. B. Hellfrich, of the Orono Pulp and Paper Company, New York, whose plant is at Orono, Me., called on the trade last week.

Japan Lessens Paper Curtailment

The Japanese Paper Manufacturers' Association on July 19 decided to lessen the existing curtailment rate on the output of foreign-style papers by 2,500 short tons effective August 1, in anticipation of still further increases in the demand during the coming fall, according to a report from Assistant Trade Commissioner Donald W. Smith, Toyoko. This is the fourth easing of the reduction in output since January 1, 1934, augmenting production by 7,500 tons since that date. The output of foreign-style papers by the members of the Association during June amounted to 66,497 tons, an increase of 1,637 tons over the preceding month and of 10,862 tons over June, 1933. The total output for the first six months of the current year amounted to 380,567 tons, an increase of 41,398 tons over the corresponding period last year. Sales by the Association's members during June amounted to 66,133 tons, a drop of 3,308 tons compared with May but an increase of 17,934 tons over June, 1933. Total sales for the first six months amounted to 387,575 tons, an increase of 51,157 tons over the first half of 1933.

P. M. Foster Goes with Williams-Gray

Paul M. Foster, formerly with the Beloit Iron Works and at present connected with the Albany Felt Company, will become associated September 1, 1934, with the Williams-Gray Company, paper and pulp mill supplies, 221 North LaSalle street, Chicago.

Canadian Paper and Pulp Output Advances

Dominion Bureau of Statistics Reports 67 Mills Making Paper In 1933 Manufactured 2,416,810 Tons of Paper and Paper Products Valued At $97,030,429—Although Volume Increased 5 Per Cent, Value of Output Declined 19 Per Cent.

[FROM OUR REGULAR CORRESPONDENT]

MONTREAL, Que., August 27, 1934—Melancholy interest attaches to the report on the pulp and paper industry for the year 1933 by the Dominion Bureau of Statistics, because the record of that year represents the lower depths to which the industry sank as a result of the depression—depths from which it has registered a spectacular ascent as regards volume of production, though not as regards price or profit. A point of interest is that the recovery as regards volume had begun in 1933, production of newsprint, for instance, being 2,021,065 tons for that year, as compared with 1,919,205 tons in 1932, but the value of this larger production was only $66,959,501, as compared with $85,539,852 for the smaller volume of 1932. For the pulp and paper industry as a whole gross value was down over $12,000,000 or $123,415,492 from $135,648,629, and net down at $75.782,971 from $86,677,762. This indicates a decrease of 9.01 per cent in gross value of production last year and of 12.56 per cent in net value. Both gross and net production value for 1933 show a drop of almost 50 per cent from the peak year of 1929, gross for that year being $243,970,761 and net $147,096,012.

The seventy mills manufacturing pulp produced 2,979,562 tons valued at $64,114,074 as compared to 2,663,248 tons in 1932 valued at $64,412,453, representing an increase of 11.9 per cent in quantity and a decrease of less than a half of one per cent in value. Of the total for 1933, the combined pulp and paper mills produced 2,225,540 tons valued at $37,720,011 for their own use in papermaking, an increase of six per cent in quantity but a decrease of twelve per cent in total value. A total of 124,239 tons valued at $4,235,902 was made for sale in Canada, showing an increase of fifteen per cent in quantity and also an increase in value of six per cent, and 629,783 tons valued at $27,149,161 were made for export, an increase of thirty-seven per cent in quantity and twenty-six per cent in value.

The 67 mills making paper in 1933 produced 2,416,810 tons of paper and other products valued at $97,030,429 as compared with 2,290,767 tons and $114,115,570 in 1932, an increase of five per cent in quantity and a decrease of 19 per cent in value.

Exports of wood pulp from Canada during the calendar year 1933 amounted to 608,510 tons valued at $23,354,637 as compared to 452,293 tons in 1932 valued at $18,930,064, an increase of thirty-five per cent in quantity and twenty-three per cent in value. During 1933 the imports of wood pulp were 5,706 tons valued at $177,289, a decrease in quantity and value.

Exports of paper and paper goods during the calendar year 1933 were valued at $72,396,132 as compared with $86,323,539 in 1932. These exports were made up chiefly of newsprint paper, of which 1,838,105 tons valued at $69,200,516 were exported, chiefly to the United States.

Crisis Nears for Price Bros. & Co.

Whether the contract between the Bondholders Protective Committee of Price Bros. & Co. and Bowater's Paper Mills for the reorganization of the company will be fulfilled or canceled may be decided in the present week. At any rate hopes are entertained that before the end of the month the viewpoints of the several classes of creditors and shareholders may be reconciled and the future of the company decided. Meanwhile there is conjecture as to what will happen if the Protective Committee is held to the agreement by the company and asked to put the property up for sale. The opinion is that the committee will make no effort to foreclose on the mortgaged property if there is the least chance of effecting an internal reorganization. If the property is put up for sale by auction it is said an independent bid will be made for it by the Duke-Price Power Company. which supplies the company with power and has a large claim as an unsecured creditor, but is interested in securing control for its own sake.

Pacific Mills Profit Higher

Pacific Mills, Ltd., operating plants at Ocean Falls and Vancouver, reports substantially higher earnings for the year ended April 30, 1934.

Net profit after all charges, including depreciation and depletion, bond interest and taxes, was $182,808. This compares with $36,242 in the previous fiscal year.

After deducting all senior charges, including preference dividends, there was available for the ordinary shares $62,874, equivalent to 84 cents a share. In the previous fiscal year, there was a deficit of $83,692, equivalent to $1.12 a share, after taking care of all senior obligations, including the dividend of $119,934 on the preference stock.

These results are exclusive of profits on the company's own bonds purchased for redemption, which profits were credited direct to earned surplus.

Working capital position was well maintained and investment in government securities increased from $1,473,181 to $1,795,562 during the year. Another constructive factor was the reduction in bonded indebtedness to the extent of $331,800, leaving outstanding funded debt of $2,774,200.

Minas Basin Power Project

A despatch from Halifax reports that a contract for the construction of a power dam on the St. Croix River development for the Minas Basin Pulp and Power Company has been awarded and will commence within a few weeks. This power development will cost approximately $300,000.

Heavy Pulp Shipments Arrive at Albany

ALBANY, N. Y., August 20, 1934—Cargoes are taxing all facilities at the local port following the arrival this week of several foreign vessels. A vessel from Chatham, New Brunswick, carrying several thousand tons, arrived early in the week and was followed soon afterwards by a Norwegian ship from Oslo with a large cargo. A vessel from Hernosand, Sweden, arrived late in the week and was followed by a large shipment of the imported product from Sheet Harbor, Canada. Another shipment from Sweden is scheduled to arrive here early next week. The pulp is being unloaded rapidly and it has been necessary to enlarge the force of stevedores at the local port. A greater portion of these shipments are scheduled to be conveyed by rail and water to paper mills in Northern New York.

Paper Mills Moderately Active In Ontario

Although Manufacturing Operations Have Been Reduced, Due to Seasonal Causes, General Outlook for Both Fine and Coarse Paper Plants Is Considered Promising—Quotations on Practically All Standard Grades Are Holding to Schedule

[FROM OUR REGULAR CORRESPONDENT]

TORONTO, Ont., August 27, 1934—Although the month just closing saw reduced tonnage of all classes of paper at the mills the output was considered satisfactory by both manufacturers and paper merchants considering the presence of the holiday season. The falling-off in business by mills and wholesalers during August was considerably less in volume than it was a year ago and the general outlook for both fine and coarse papers is considered bright.

At the moment, however, both manufacturing plants and distributors are experiencing difficulty in securing future placements and what orders there are going are for current account. There appears to be some nice business ready for release as soon as the holiday season is at an end and there are a number of signs that point to really good business as soon as the Fall season sets in.

Practically all lines of paper are firm in price and if, in some cases, there is a disposition to complain of light current orders, it is set down as reflecting conditions across the border and to the partial disruption of trade by the vacation period. It is noticeable, however, that there is a greater tonnage of high grade papers being put on the market and absorbed than has been the case for months and this is considered a good sign.

There is no longer an insistent demand for cheap grades of stock by printers and other consumers of fine papers and catalogs and direct mail advertising are going out now in coated and other higher grade lines of paper. This condition has developed a month or two ago and is helping both mills and distributors materially to make a sales showing from week to week.

Better paper also is going into the products of the paper converters, although it must be said that this section of the paper industry is none too active just now. Envelope manufacture is somewhat slow and general stationery lines are more or less inactive, although slightly better than a few months ago.

Manufacturers of glassine, greaseproof, waxing and similar lines say that business is keeping up fairly well and they have had a good season. The same may be said of such light weight paper lines as tissues and toilets, the demand for paper napkins, towels, etc., having kept up all through the holiday season.

Interlake Acquires Additional Property

It was announced at the head office of the company in Toronto a few days ago that the Interlake Tissue Mills, Ltd., of Merritton, Ont., had purchased the seven and a half acre property formerly owned by the Independent Rubber Co. in that town and quite close to its mill. The property is on the old Welland Canal and adjoins that of the Riordon Paper Mills. The mill was closed when the Independent Rubber Co. merged with the Dominion Rubber. Co. Originally built for the Merritton Cotton Co., the construction of the buildings is most substantial. Since Interlake acquired the property all the buildings have been put into first class repair and the whole surrounded by heavy industrial fencing. For some time Interlake has been renting the premises for warehousing purposes and if at a later date they are used for additional manufacturing units it will likely be for conversion in the making of certain specialty lines of light weight papers, according to the president, George Carruthers.

Notes and Jottings of the Trade

Pulpwood cut on Crown lands in New Brunswick this year will be at least 25 per cent. greater than in 1933, according to a preliminary estimate of the provincial government. Last year's cut was 63,000 cords and this year the figure is expected to be about 80,000 cords. The Crown stumpage rate of $1 a cord was continued until August 20 to make up for the two weeks lost in June when 3,000 men in pulpwood crews were enlisted to fight forest fires. After August 2 the stumpage was $1.50 a cord.

According to a statement issued by the Hammermill Paper Co., Erie, Pa. the report appearing in a number of papers that the company contemplated building a paper mill on the Matane River was incorrect. The company said they never considered establishing a mill at that point. The company has timberlands in that territory from which pulpwood is shipped to Erie for the pulp mill there. The developments at Matane at the present time involve only the construction of a small dam in the woods for the operations of driving pulpwood.

While the search for sulphur deposits is being assiduously pushed in two different sections of southwestern Ontario, conclusive results had not been secured in August and recent drillings have been more negative than otherwise.

Over 200 members of the joint convention of the American Society of Civil Engineers and the Engineering Institute of Canada recently visited the plant of the Powell River Company at Powell River, B. C. The visitors were shown over the mill and power plant in small groups led by guides, and then taken on a tour of the company's town and suburbs.

The death took place recently in Vancouver of Arthur James Grass, builder of pulp and paper mills. Deceased was born in New Brunswick but left that province to work in construction camps in various parts of the country. He entered the employ of the late James Whalen at Port Arthur in 1914 as manager of the Whalen Pulp and Paper Mill, now the British Columbia Pulp and Paper Company. He went later to Port Angeles, Wash., where he was superintendent of construction at the building of the large paper mill there.

The Mid-West Paper Sales Company of Winnipeg, Manitoba, with branch offices at Calgary, Edmonton, Saskatoon and Regina, have been appointed sales representatives in Western Canada for Bradshaw's Ltd., of Toronto, and are now handling a full line of Bradshaw's cellophane bags throughout the West.

Paul Hoff, employee of the Abitibi Power and Paper Company in the woods department, was seriously injured when a railway speeder on which he was riding left the track. He was treated in Iroquois Hospital.

A good representation of the Toronto wholesale paper fraternity was present at the annual convention of the International Association of Printing House Craftsmen in the Royal York Hotel in Toronto on August 26, 27 and 28.

Philadelphia Paper Market Continues Quiet

Summer Dullness Prevails In All Branches of Paper Industry, With Exception of Hot Weather Specialties, Which Are Still Moving Freely—Broadening Demand Anticipated for Standard Grades of Fine and Coarse Papers After Labor Day

[FROM OUR REGULAR CORRESPONDENT]

PHILADELPHIA, Pa., August 27, 1934.—Intensified summer dullness still prevails in most lines of the paper industry, and leading merchants do not expect the fall impetus to make itself felt to any marked extent before late September. This does not mean that there is anything new or particularly disturbing in the situation. On the contrary, there is a distinct feeling of confidence among the trade. Meanwhile, policies of the immediate future make business hesitant about making plans for expansion beyond the filling of immediate needs. The retail trade here has held to a fair level this summer, but is below what was predicted early in the spring.

A broadening demand for book papers, bonds and covers, and other lines consumed in direct mail advertising is looked upon as the coming business revival for fall. Preparatory to the Labor Day holiday, there is considerable betterment reported in post-summer demand for hot-weather specialties, such as drinking cups, fancy plates, paper spoons, napkins and all that is necessary for the proverbial picnic outfits.

With the signing by the National Recovery Administration of the order providing for fixed minimum prices on basic grades of waste paper, the whole complexion of the waste paper market has been changed from one of losing a dollar to that of making a narrow margin of profit. The prices promulgated are $8.50 a ton on folded news and $6.50 a ton on No. 1 mixed paper, f.o.b. packer's plant, and are effective immediately.

In these columns last week, it was stated that ere this paper was off the press, news was expected of the signing of the official NRA order in Washington, thus establishing minimum sales prices on basic grades of waste paper. The prices announced are in line with those previously unofficially reported, and became effective immediately on the signing of the order. These minimum prices apply to all sales of folded news and No. 1 mixed paper to consuming mills for a period of ninety days, or longer if market conditions at the end of the three-month space of time are found to be such as to justify their continuance.

The two basic grades of folded news and No. 1 mixed paper were singled out for the imposition of minimum prices. This was in accordance with the petition of the Waste Paper Code Authority, which requested that the price-control schedule be applied to these two descriptions of waste paper only. The dominant thought is that market prices of all other of the so-called low grades of old paper will automatically adjust themselves in proportion to the fixed market levels on these two pivotal grades, which comprise in point of tonnage the greater percentage of low-grade waste paper produced. Any sales at less than these prices will constitute a violation of the Code, and packers or dealers selling at lower prices will be subject to prosecution as Code violators.

The purpose of the minimum price is to elevate market levels of waster paper to mills to enable packers to secure sufficient return for their product to permit them to meet the added costs imposed by the Code in increasing wages and shortening hours of labor.

Alleged Code Violation

Charged with violation of the wage provisions of the NRA Code governing their industry, two officials of the Edwards Folding Box Company, of 27 North 6th Street, were held under $1,000 bail each by Commissioner William S. Wacker, for a further hearing September 12.

They were Theodore L. Gamble, treasurer, and R. F. Edwards, Jr., secretary of the corporation. It was agreed that a third official named in the warrant, George Edwards, vice-president, would be produced by his attorney, Colonel Ralph S. Croskey, upon that date. He is abroad on his vacation. The Government's case was presented by Assistant U. S. Attorney Robert V. Bolger. He made an unsuccessful effort to have the case heard earlier.

The affidavit accompanying the warrant contains 26 pages, and alleged violation of Code 193, covering the folding paper box industry as approved by the President, January 8, 1934. A clause of the code fixes a minimum of 40 cents an hour for skilled male workers, and 35 cents per hour for women. It is alleged in the affidavit that the firm is paying from 24 to 32 cents, thus making possible alleged unfair competition with firms in the industry who are paying the code wage.

News of the Trade

W. S. Wilcox, chairman of the Sub-Committee for the Philadelphia Area, presided at the meeting of this committee, which was held on Wednesday at the headquarters of the Philadelphia Paper Trade Association in the Drexel Building. Mr. Wilcox states that matters are progressing smoothly.

The paper Manufacturing Company, Inc., 5th and Willow streets, has added seven different new colors to its line of gummed paper; also ten new white papers, including supers, English finish and coated for label manufacturers and printers. A descriptive booklet containing new price set-up on gummed papers, including white and colored, is in the course of preparation and will shortly be available to the trade.

W. S. Wilcox, of Wilcox-Walter-Furlong Paper Company, 17 South Sixth street, is leaving for Kidney Pond, Maine, where he will spend a couple of weeks.

W. L. Simmons, Sr., of John Simmons Company, 28 South Marshall street, motors shorewards each week, making his headquarters at Asbury Park.

Vulc-On Rubber Tired Wheels

A four-page booklet on its newly introduced line of Vulc-On rubber tired wheels for industrial trucks has just been issued by The B. F. Goodrich Company, Akron, Ohio, and is now available upon request to the manufacturer.

The booklet points out the many advantages of Vulc-On rubber tired industrial wheels as compared to the obsolete steel wheels on equipment already in service, gives data concerning comparative tests between rubber tired and steel wheels. Savings possible by use of rubber tired wheels is pointed out and sizes and specifications, as well as wheel numbers to be used as guides when ordering Vulc-On wheels are included.

Program for Pacific Coast TAPPI Meeting

Technical minds of the pulp and paper industry throughout the world are dusting off their best luggage and polishing up their technical "papers" on the science of paper making, in preparation of a trek to Portland, Ore., where the 1934 international convention of the Technical Association of Pulp and Paper Industry will convene September 10 to 13.

The association was organized in 1915 for the purpose of maintaining a clearing house for new developments in the industry and to meet in convention each year where there could be an exchange of experiences and ideas. The membership has grown to 1100, with many foreign countries represented The convention committee with H. Robert Heuer of Longview, Wash., as chairman, has been receiving a heavy advance registration and is preparing to entertain at least 800 delegates. It is the first time the convention has been held west of the Rocky Mountains and the westerners are bending every effort to display their finest weather, scenic beauties and hospitality to the very best advantage.

A diversified program has been arranged with sufficient material to give the technical minded an opportunity to listen to experts in their various lines and to discuss improvements in processes and equipment. The mechanical departments have not been overlooked. An elaborate machinery and equipment exhibit has been arranged in the convention building to accommodate a large number of manufacturers from all over the United States who have indicated their desire to display their latest developments in equipment to members of the TAPPI.

Entertainment of various kinds has been scheduled to balance up the program. Side trips from Portland will be made to conveniently located mills. A visit will be made to the Crown-Willamette Paper Company, at Camas, Wash., 25 miles east of Portland. This mill is the largest specialty paper manufacturing plant in the world, producing more than 1,000 different kinds of paper. This inspection will be concluded with a trip over the Evergreen Highway along the world famous Columbia River.

One of the outstanding trips will be to Cathlamet, Wash., where the Crown-Willamette Paper Company, will be hosts, and then on up to Longview, Wash., founded by R. A. Long, 52 miles from Portland, where the Weyerhaeuser Timber Company will supply a special train to take the visitors 20 miles into the big woods. This train has been named the "Paul Bunyan Express" in honor of that famous legendary logger. Many stories are told and numerous legends about "Paul Bunyan and 'Babe,' his 'big blue ox,' most of which will be revived on this occasion. The train will be equipped with a loud speaking system and every logging operation explained while it is being done, before the eyes of the visitors. This will be particularly interesting to those visiting the big timber area for the first time.

The Palmer House in Chicago has been selected as a meeting place for delegates traveling from the south and east, where reception rooms and other courtesies will be provided. Special trains will leave Chicago at 10:30 P. M. September 5 on the Northern Pacific. A short stop will be made in the Dakotas for an Indian Ceremony and a one day stop and tour of Yellowstone Park. On the night of September 8 the trains will lie over six hours in Spokane, Wash., where an elaborate dinner dance will be arranged for the delegates. Special trains will also stop for a few minutes at the site of the new Bonneville dam, being built by the United State Government at a cost of $31,000,000. Delegates will arrive in Portland at 10:00 A. M. Sunday, September 9.

The Portland convention committee is preparing many kinds of entertainment. A golf tournament has been arranged on one of the best courses in the city, with some very valuable awards for the best brands of golf. Dinner dances and other recreational features are also listed. The ladies are being cordially invited to take advantage of special features for their special benefit which include golf, trips, teas and such like. One day will be devoted to a trip up the Columbia River Highway and around the perpetually snow-capped Mt. Hood, with luncheon served at the precipitously located Cloud Cap Inn, a never to be forgotten scenic wonder, located 6,000 feet above sea level.

Saturday, September 8

Dinner dance at Davenport Hotel, Spokane, Wash., and awarding of free Alaska cruise.

Sunday, September 9

Arrival of "TAPPI" special trains in Portland, 10:00 A. M.
Typical Western reception.
Registration.
Sight-seeing.

Monday, September 10

Registration.
Morning technical sessions.
Noon luncheon.
"Potential Power Resources in the Northwest and Its Relation to the Pulp and Paper Industry." By: W. D. B. Dodson, executive vice-president, Portland Chamber of Commerce.

Afternoon

Technical sessions.

Evening

President's dinner.
Distinguished speakers, music and entertainment.
Toastmaster: Franklin T. Griffith, pres. Portland Electric Power Company.
Dinner Dress Optional.

LADIES' PROGRAM

Sight-seeing trips about the city.

Tuesday, September 11

MEN'S PROGRAM

Bus and train trip to logging operations of the Crown-Willamette Paper Company at Cathlamet, Wash., and the Weyerhaeuser Timber Company, at Longview, Wash. Return to Portland at dinner time.
Open evening.

LADIES' PROGRAM

Trip up the Columbia River Highway, Lunch at Cloud Cap Inn on Mt. Hood and return to Portland, dinner time.
Open evening.

Wednesday, September 12

Technical sessions in the morning.
Joint luncheon with ladies.

"A Business Forecast for the Future Based on a Study of Planetary Influences"—From the Book—Stars Ahead, illustrated with slides. By: Ray Smythe, Portland, Ore.

Afternoon

Mill visit Crown-Willamette Paper Company, Camas, Wash.

A short trip up Columbia River.

Evening

Cabaret entertainment.

LADIES' PROGRAM

Noon luncheon with men.

Tea party on Columbia River Highway at a Famous Country Estate.

Cabaret.

Thursday, September 13

Technical sessions.

Pacific Section business meeting and election of officers.

Buffet luncheon.

Afternoon

Golf tournament for men, Portland Golf Club.

Evening

Farewell dinner.

Awarding of golf prizes: Toastmaster: Ralph Shaffer, Shaffer Pulp Co., Tacoma, Wash.

Dancing—entertainment.

LADIES' PROGRAM

Bridge and golf.

Papers to be Presented

"Forest Supplies of the Northwest of Interest to the Pulp and Paper Manufacturer." By—Thornton T. Munger, director Pacific Northwest Forest Experiment Station, Portland, Ore. Illustrated with slides.

"History and Biography of the Industry." By—Ralph M. Snell, Hurlbut Paper Company, Lee, Mass.

"A Study of the Nature of the Coloring Matter in Kraft Pulps." By—Walter Holzer, Crown-Willamette Paper Company, Camas, Wash.

"Spray Type Sulphur Burner." By—Otto Kress, E. C. Porter, W. H. Swanson, B. F. Smith.

"Heat Transmission in Paper Drying Processes." By—Charles S. Keevil, Dept. of Chemistry, Oregon State College, Corvallis, Ore.

"The System CaO—SO2—H2O." By—Dr. W. L. Beuschlein, Professor Chemical Engineering, University of Washington, Seattle, Wash.

"Influence of pH on the Absorption of Dyes by Cellulose and Fillers." By—Leo Freidman, Department of Chemistry, Oregon State College, Corvallis, Ore.

"The Pulping of Douglas Fir in Ammonium Bisulphite Solution." By—Dr. H. K. Benson, Dean, Department of Chemistry, University of Washington, Seattle, Wash.

"Increasing the Usefulness of Less Expensive Paper Fibres with Zinc Sulphide Pigments." By—F. A. Steele, New Jersey Zinc Company.

"The Casting Problems of Stainless Steel." By—Ernest C. Swigart, vice president, Electric Steel Foundry Co., Portland, Ore.

"The 14" Stream Line Between the Washington Gas & Electric Company and the Longview Fibre Co." By—Ralph Smalley, vice president, Washington Gas & Electric Company, Longview, Wash.

"Design and Operation of Hog Fuel Burning and Handling Equipment." By—H. S. Bastian, Combustion Engineering Company, Portland, Ore.

"Motor Control Equipment of the Cubicle Type for 440-2200 volt operations." By—K. L. Howe, Westinghouse Electric & Mfg. Company, Seattle, Washington. And, E. H. Vicary, Engineer, representing: Crown-Zellerbach Corporation, Olympic Forest Products Company, Rainier Pulp and Paper Company, Grays Harbor Pulp and Paper Company.

"Modern Electrical Equipment in the Pulp & Paper Industry." By—R. V. Maier, General Electric Company, Portland, Ore.

"Power in the Northwest." By—C. C. Heckley, Paper Mill Consulting Engineer. At present, Oregon State Public Works Engineer.

"Potential Power Resources in the Northwest and its Relation to the Pulp and Paper Industry." By—W. D. B. Dodson, executive vice president, Portland Chamber of Commerce.

"A business forecast for the future based on a study of planetary influences"—from the book—"Stars Ahead," (Ilustrated with slides.). By—Ray Smythe, Portland, Ore.

"Technical Control as Applied in West Coast Pulp and Paper Mills." By—R. J. Schadt and G. R. Long, Crown Willamette Paper Company, Camas, Wash.

"Consistency Regulation." By—Frederick Wierk, Johnson & Wierk Consulting Engineers, New York City.

"Maintenance Work and Cost, and its Relation to the Technical Man." By—Wm. Gibson, Chief Engineer, Rainier Pulp and Paper Company, Shelton, Washington.

"The Pulp Wood Supply of the Pacific Northwest." By—Minot Davis, Manager, Logging and Timber Department, Weyerhaeuser Timber Co., Tacoma, Wash.

"Metalayer Operation as Applied to Pulp and Paper Industry." By—Lee H. Place, Engineering Supervisor, Air Reduction Sales Company, Portland, Oregon.

"The Theory of Absorption Applied to the Sulphite Tower." By—W. L. Beuschlein, Professor Chemical Engineering, University of Washington, Seattle, Wash.

"Pulp Specifications." By—H. U. Keily, American Writing Paper Company, Holyoke, Mass.

Factors in Measurement of Air Permeability of Paper

By means of the sensitive instrument recently developed at the National Bureau of Standards, a careful study has been made of the relation of the rate of flow of air through paper to the necessary experimental conditions. The results are reported by F. T. Carson in the Bureau Research Paper No. 682. The results show that with few exceptions the flow of air is proportional to the pressure difference, for small pressure differences; proportional to the time of flow; proportional to the effective area of the specimen; and inversely proportional to the thickness of the material. With the type of measuring instrument used the results do not depend upon the viscosity of the air. The effect of relative humidity is unpredictable. The air permeability of paper was found to increase somewhat with decreasing absolute pressure, an unexpected behavior which may be associated with an elastic expansion of the structure.

Except for the absolute-pressure results, all the data agree remarkably well with Meyer's equation for the flow of a gas through a long capillary tube, and indicate that the air passages in paper behave as if they were a group of capillary tubes having an average length of several millimeters, or many times the thickness of the sheet.

A comprehensive definition of air permeability in relation to paper and fiber board is presented, and suggestions are made relative to a standard testing method.

The report can be obtained from the Superintendent of Documents, Washington, D. C., for 10 cents (cash).

Obituary

Robert T. Houk, Jr.

[FROM OUR REGULAR CORRESPONDENT]

DAYTON, Ohio, August 27, 1934—Death claimed Robert Thruston Houk, Jr., president of the G. H. Meal Company of this city, Friday afternoon at 3 o'clock at his residence on Thruston Boulevard, Oakwood, following an illness of only twelve hours.

Mr. Houk was stricken with an acute heart attack early Friday morning and died while sleeping. He was born in Dayton September 28, 1890, the son of Colonel and Mrs. Robert T. Houk; attended Steele High School, from which he was graduated in 1907, and received his degree at Hobart College in 1913.

Three years after graduating from Hobart College he affiliated himself with the Mead Company, one of the largest paper concerns of its kind in the country, thereafter being vice-president. For the last three years he served as president of the company.

Mr. Houk was widely and favorably known throughout the trade and was particularly beloved by the people of his home city. He always manifested a deep interest in civic affairs, having served as chairman of the special gifts committee of the Community Chest.

This position carried much responsibility in the matter of making a success of the vast amount of funds obtained for all charitable purposes here, including all hospitals and every known branch of civic work.

Upon the amount secured by the special gifts committee largely depended the success of the Chest project, although several hundred thousand dollars were otherwise contributed, annually.

He was a member of the Board of Directors of the Dayton Country Club at the time of his death.

Mr. Houk was an enthusiastic sportsman and during the past week had been interested in the national polo games being staged at the Miami Valley and polo grounds just south of Dayton. He was fond of polo and was an expert golfer.

As a member of the Miami Valley Hunt and Polo Club, he was active in all of its affairs and had assisted in bringing the polo tournament, in which many of the leading players of the United States took part, to this city.

Mr. Houk also was a member of the Buz Fuz Club, a social organization composed of leading business and professional men of Dayton.

Besides his parents, he is survived by his widow, Sarah L. Houk; five children, Sarah L., Robert III, Ruth M., Katherine E., and Elizabeth, all of Dayton; two sisters, Mrs. D. C. Flint, Dayton, and Mrs. A. M. Hammer, Lexington, Mass.; and two brothers G. W. Houk, of Portland, Ore. and J. T. Houk of Dayton.

Mr. Houk was a member of one of the oldest families in Ohio, one that played its part conspicuously in the legislative and commercial history of the state.

George Leighton Webb

[FROM OUR REGULAR CORRESPONDENT]

BOSTON, Mass., August 27, 1934—Word has been received here from New Haven, Conn., of the death Thursday of George Leighton Webb, vice-president of Storrs & Bement Company of Boston, at the New Haven Hospital. Mr. Webb was born in Newcastle, Me., the son of William and Jeanette Glidden Webb. In 1895 he married Elizabeth Lincoln Clark, daughter of the Hon. Ames Clark, of Elizabeth, N. J. She survives him, as does a daughter, Mrs. John Perrin (Beatrice Clark Webb), of Chestnut Hill, Mass.

In the early part of his business career, he was in the twine business, with the firm of Ross, Turner & Co., large distributors of that commodity. He had been in the paper business and with Storrs & Bement Company for many years and had offices in New Haven on Crown Street. When in Boston he resided at the Hotel Somerset. Mr. Webb was a member of the Union League Club of New Haven and the Race Brook Country Club, also of that city. He was a member of the Maine Club, a member and on the board of directors of the Advertising Club of New Haven, a member of the New England Paper Merchants Association, and had been a member of the New Haven Chamber of Commerce.

The funeral was held Saturday morning at the Funeral Home of Beecher, Bennett & Lincoln, New Haven, with burial at Elizabeth, N. J. Among the members of the trade who attended from Boston were William N. Stetson, Jr., president and treasurer, and John H. Brewer, general manager and secretary of Storrs & Bement Company.

James Watson Quigley

DAYTON, Ohio, August 20, 1934—Funeral services were held Monday, August 20, at 8 A.M. from the St. Mary church in Franklin for James Watson Quigley, 54, who died Tuesday afternoon at his home in Miami, Fla.

The decedent was born in Ireland, November 1, 1880, the son of George Quigley and Matilda Watson Quigley, going to Franklin when a young man, where he was employed by the Vulcanite Roofing Company. He was later affiliated with the Logan-Long Roofing Company, helping to organize the same, when he was made secretary and treasurer and general manager of the local plant, in later years being elected to the office of vice president of the company. Due to ill health, he was forced to retire, leaving to make his home in Miami, Florida, in August, 1930.

The body arrived in Franklin on Saturday, and was brought to the home of W. E. O'Donnell, 108 N. Main street. Private services were held at Woodhill cemetery.

Surviving are the widow, Jessie Quigley, four sons; Robert, John L., William and Gordon, and two brothers, Andy of Port Elisabeth, South Africa, and George of Belfast, Ireland.

Robert A. Beggs

PHILADELPHIA, Pa., August 27, 1934.—Funeral services were held during the week for Robert A. Beggs, president and founder of the Beggs and Graham Company, paper box manufacturers, 204 Chancellor street.

Mr. Beggs died at the home of his son, Robert A. Beggs, Jr., at Merion, in his 88th year. He was one of the oldest box manufacturers in this city, having entered the business with George W. Plumly Company, in 1878. In 1900 Mr. Beggs founded the present business in partnership with the late Charles T. Graham. At the latter's death, Mr. Beggs became sole proprietor.

He was a member of the old Columbia Club, formerly at Broad and Oxford streets, and was a life member of the Manufacturers' Club, and was active at the Walnut Street Presbyterian Church. He is survived by his son, who is an attorney.

Arthur L. Pratt

Arthur L. Pratt, Kalamazoo, Mich., formerly president of the Allied Paper Mills of that city, died August 3, aged 72 years. He had been in poor health for some time. Mr. Pratt was one of the organizers of the King Paper Company, Kalamazoo, in 1901, and was one of the pioneer paper mill operators in the Kalamazoo River Valley district.

Box Board Production for June

Monthly statistics of Box Board for 94 identical manufacturers compiled from data furnished by the National Paperboard Association from reports of members, and by manufacturers reporting direct to the Bureau of the Census, are presented in the following table.

Rated (24-hour) capacity data of box-board machines in inch-hours in this report are based on last dryer width whereas those shown in reports published for earlier years were based on maximum trim width. The capacity data vary according to the normal number of working days in each month.

Year and Month	Operated (Inch hours) (Based on last dryer width) Rated Capacity	Operated	Per cent of Capacity	Production (tons) Rated Capacity	Output	Per cent of Capacity	New Orders (Tons)	Unfilled Orders (Tons)
1934								
Jan.	14,660,767	8,386,520	57.2	401,900	230,311	57.3	218,169	63,328
Feb.	13,048,031	8,298,684	63.6	351,714	223,366	63.5	234,318	75,143
March	14,995,780	9,454,746	63.0	401,966	254,819	63.4	264,985	86,033
April	13,703,272	8,978,520	65.5	369,881	244,334	66.1	230,754	76,578
May	14,934,038	8,374,520	56.1	403,139	223,478	55.4	225,957	80,958
June	14,658,061	8,355,200	57.0	392,585	224,214	57.1	214,236	72,990
Total (6 mos.)	85,999,949	51,848,090	60.3	2,321,185	1,400,522	60.3	1,388,419	.....
1933								
Jan.	14,210,696	7,679,402	54.0	392,770	205,326	52.3	207,214	36,065
Feb.	12,560,626	7,572,068	60.3	350,350	205,871	58.8	207,705	38,505
March	15,472,220	8,758,969	56.6	432,799	237,536	54.9	250,480	53,542
April	13,761,134	8,185,670	59.5	384,846	223,845	58.2	236,022	70,099
May	14,888,820	10,418,818	70.0	417,798	287,032	68.7	294,460	76,719
June	13,695,506	10,432,158	76.2	384,283	292,967	76.2	349,650	144,307
Total (6 mos.)	84,589,002	53,047,085	62.7	2,362,846	1,452,577	61.5	1,545,531	.....

Year and Month	Shipments of box board [1]	Stocks of box board end of month [1]	Consumption of waste paper [2] Capacity	Consumed	Per cent of capacity	Stocks of waste paper end of month [2] Total	At plants	In transit and unshipped purchases
	Tons					Tons		
1934								
Jan.	187,557	77,825	310,621	170,763	55.0	204,440	176,761	27,679
Feb.	192,685	75,687	307,169	176,423	57.4	230,186	193,321	36,865
March	221,114	84,326	372,880	220,074	59.6	235,555	204,259	31,296
April	213,956	82,190	311,133	191,545	61.6	241,751	213,308	28,443
May	197,543	*74,670	310,264	167,978	54.1	250,944	223,262	27,682
June	190,896	70,711	391,275	205,418	52.5	235,797	219,847	15,950
Total (6 mos.)	1,203,751	.....	2,003,342	1,134,201	56.6	.....	.....	.....
1933								
Jan.	149,743	80,925	232,576	118,870	51.1	139,761	119,382	20,379
Feb.	158,993	77,778	231,128	132,380	57.3	135,118	107,427	27,691
March	181,796	77,902	260,802	148,318	56.9	124,176	101,537	22,639
April	174,914	78,827	291,600	168,569	57.8	139,691	112,230	27,461
May	221,612	76,953	324,841	213,697	65.8	123,832	92,201	31,631
June	260,101	66,932	252,600	203,804	80.7	107,268	81,531	25,737
Total (6 mos.)	1,147,159	.....	1,593,547	985,638	61.9	.....	.....	.....

* Revised.

[1] As reported by 78 manufacturers that showed production of 199,711 tons of box board for January, 195,662 tons for February, 219,452 tons for March, 211,985 tons for April, 199,226 tons for May, and 186,937 tons for June.

[2] As reported by 70 manufacturers.

Reforestation Work in New York

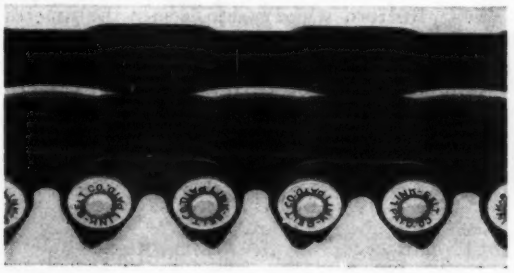
HARRISVILLE, N. Y., August 27, 1934.—Options on about 4,500 acres of land adjoining the C.C.C. camp near this place are being obtained to promote reforestation work and plans call for the planting of over 2,000,000 trees this fall if the present drought breaks sufficiently. There is considerable activity in the conservation camp just now and already about 5,000 acres have been surveyed. The county forestry council plans to make its annual forestry tour in September.

Announcement was made this week by the Conservation Department that more than 200,000 men in various sections of the state obtained employment during the spring and early summer planting season. Projects dealing with reforestation work were instrumental in relieving the unemployment.

Silverstreak Silent Chain

In keeping with today's trend toward greater thought to the aesthetic in designing even the commonest machinery part, Link-Belt Company, Indianapolis, announces that it has given a "new dress" to a 32-year-old product, the Link-Belt Silent Chain Drive, by bluing most of the chain, and treating the washers and guide bars to give them a silvered appearance. The bluing of the bulk of the chain has the effect of placing the silvery parts on a dark blue background, thereby emphasizing the silvery parts.

The trade name Silverstreak has been adopted as a fitting designation, since when the drive is in operation the motion of the chain describes a silvery streak. Thus, the modernized chain has a distinctive appearance, irrespective of whether it is in motion or lying in stock awaiting installation. It is made in all standard types, for both industrial first reduction drives and automotive silent timing; viz., Side Flanged, Middle Guide, No Back Bend, and Duplex types.



No claims for improved efficiency, strength or durability are made, as it is said that silent chain is inherently positive in action, and that many of the company's silent chain drives have been in service upwards of 25 years. Link-Belt introduced silent chain in the year 1902, but the joint then was not equipped with renewable segmental bushings.

Silverstreak silent chain follows fairly closely on the heels of the announcement of Link-Belt Silverlink Roller Chain.

Simplified Practice Recommendation for Commercial Forms Reaffirmed

Simplified Practice Recommendation R37-28, covering invoice, purchase order, and inquiry forms has been reaffirmed, without change, by the standing committee in charge of the periodic review of the program.

In 1919 the first efforts were made to develop a standard invoice and largely through the activities of the Railway Accounting Officers Association, the National Association of Purchasing Agents, the National Association of Cost Accountants, and Division VI, Purchases and Stores, American Railway Association, an invoice evolved in 1925, became known as the "Simplified Invoice Form," and which attained widespread use.

The simplified invoice form was revised in 1927, and since that time it has received increased support by a great many business concerns, and by trade associations with an aggregate membership of approximately 110,000.

Copies of Simplified Practice Recommendation R37-28 may be obtained from the Superintendent of Documents, United States Government Printing Office, Washington, D. C., for 5 cents each. A facsimile of the simplified invoice form may be secured by writing to the chief of the division of simplified practice, National Bureau of Standards, Washington, D. C.

Corn Products Refining Co. Joins TAPPI

The Corn Products Refining Company, the largest of the starch companies serving the paper industry has become a member of the Technical Association of the Pulp and Paper Industry.

The Corn Products Refining Company was formed in 1906 through the consolidation of the Corn Products Company, Chicago and the New York Glucose Company, New York. The latter company had a modern plant at Edgewater, N. J., while the Corn Products Company acquired through earlier consolidations, many plants throughout the country. These have been replaced and the Corn Products Refining Company now has four completely modern and efficient factories at Argo, Ill., Pekin, Ill., Kansas City, Mo., and Edgewater, N. J.

From the inception of the Corn Products Refining Company, E. T. Bedford was President until the time of his death in 1931. He was succeeded in the Presidency by George M. Moffett, who had been Vice-President for many years. The Treasurer and Secretary is F. T. Fisher, also a Vice-President, the General Sales Manager is J. D. Buhrer and Sales Manager of bulk products is Fred Mueller. Under the able leadership of these men and their associates, the company was built up to a position of eminence not only in this country, but also in foreign countries.

Besides the domestic plants mentioned above, the company has plants located in the following countries: Canada, England, Holland, France, Germany, Italy, Czecho-Slovakia, Jugo-Slavia, Mexico, Brazil, Argentine and Japan.

For many years, the Corn Products Refining Company has supplied the paper industry with special paper starch for use in the beaters and for adhesive purposes and other special products for specific requirements. In 1928, a new beater product, Amijel, was developed. This is a gelatinized starch which requires no cooking and so is added to the beater in the dry form. This company has also developed tub-sizing gums, as well as gums and starches for calender sizing.

In the paper industry, as well as in others, conditions and methods are continually changing, and so, as the need for new products arises, the Corn Products Refining Company is equipped and stands ready to co-operate in developing them.

At the Argo plant, there is a large, well equipped paper laboratory where work is done on starches and paper mill problems. The company also maintains a Research Service Department consisting of twenty Chemists, including a practical paper mill chemist. With this personnel, the Corn Products Refining Company is prepared to render service to the paper industry and to cope with its numerous problems.

The men who contact the paper industry as research service men are R. A. Gormley and H. A. Crown in the East; J. G. Bullard in the South; and C. L. Bogue and R. H. DeWaters in the Midwest.

New York Mills in Safety Contest

GLENS FALLS, N. Y., August 27, 1934—A number of paper mills in this section have already enrolled in the 10th annual accident prevention contest which is being sponsored throughout the state by Associated Industries of Buffalo. The contest is to be launched September 1 and entry blanks have been sent to virtually every manufacturing concern in the state. The contest will run thirteen weeks and at the conclusion the names of those concerns having the best safety records will be announced. Prizes will later be awarded the winners.

Bantam Anti-Friction Bearing Catalog

The Engineering Section of the complete anti-friction bearing catalog of the Bantam Ball Bearing Company of South Bend, Ind., is just off the press. This section is the complementary part of the sections dealing with specific bearing types and gives detailed illustrated information concerning the various methods of bearing.

As an example, the fatigue life method of estimating probable bearing service is fully discussed in its practical aspects and a conservative viewpoint is expressed for the proper position of this method in current mechanical design.

Bearing steel and its proper heat treatment is discussed in a much more complete and frank manner than is generally done. There are illustrations indicating the results of correct and incorrect methods of hardening as well as a concrete example of the difference in depth hardening of rollers made with Bantam through hardening steel and with case hardening steel.

Line drawings are used to illustrate the various disadvantages of certain types of heavy-duty roller bearing cages and comparison is made with the stronger and more serviceable one-piece cast bronze cage.

A considerable section is devoted to steel mill roll neck bearings covering Quill type, small diameter roller cage type, taper bearings and the newly developed three-row combination straight and tapered roller bearings.

It is erroneously believed in many quarters that roller capacity increases as the square of the diameter and this is now being discarded in favor of a first power increase. It is even found by the Bantam Ball Bearing Company that specific capacity decreases as roller diameter goes up and line drawings are used to show the advantages of using a large number of small diameter rollers with the corresponding increase in roller line contact.

Various methods for mounting shafts using different types of thrust and floating bearings are completely illustrated with line drawings. Several pages are devoted to different types of seals and enclosures and there are two pages devoted to general lubrication recommendations.

Throughout the booklet there are many photographs and line drawings of installations with copy explaining the merits and demerits of the constructions shown.

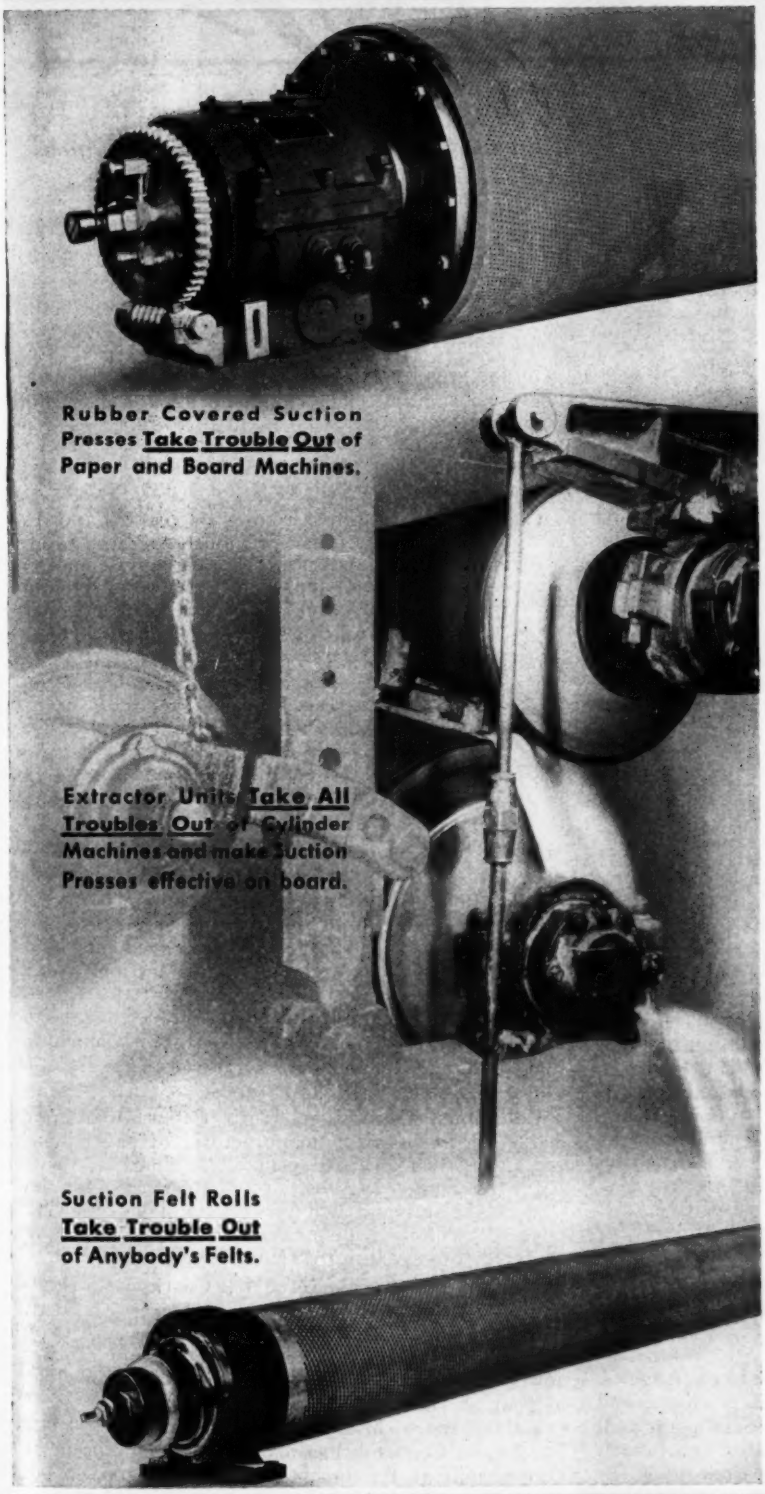
Department of Labor Imposing Restrictions on Paper Mill Supplies

The Associated Rag Industries, a division of the National Association of Waste Material Dealers, Inc., has appealed to Elmer F. Andrews, industrial commissioner, Department of Labor, New York City, to interpret in a more reasonable way the law covering the use and handling of second-hand bedding material.

Recently some of the oldest and most responsible paper mill houses in the State have been forced to buy stamps and tags and place them on material, such as cotton waste, jute waste and other similar commodities, which for years have been going to paper manufacturers. The fact that such material can be used for mattress purposes does not justify paper mill supply houses being put to a lot of expense and inconvenience, and if the Department of Labor continues to insist on regulating such material irrespective of the use to which it is put, the constitutionality of the bedding law will have to be tested in the courts.

Every effort is being made by the National Association of Waste Material Dealers, Inc., to get this matter straightened out with fairness to all concerned.

DOWNINGTOWN


Rubber Covered Suction Presses Take Trouble Out of Paper and Board Machines.
Extractor Units Take All Troubles Out of Cylinder Machines and make Suction Presses effective on board.
Suction Felt Rolls Take Trouble Out of Anybody's Felts.

if~

Natural and Unnatural LAWS

~ prevent you from selling over 66% of your capacity

Modernize Half of your machines to make it ~ ~

~

Trouble Saved *means more* Paper Made

DOWNINGTOWN MANUFACTURING CO., DOWNINGTOWN, PA.

CONSTRUCTION NEWS

A Summary of Vital Facts Regarding Construction, Finances and Operation of Paper Mills

Construction News

St. Louis, Mo.—The M. A. Brown Paper Box Company, 1240-46 Chouteau avenue, is considering early rebuilding of portion of plant, recently destroyed by fire. Loss reported close to $18,000, including equipment.

Madison, Wis.—Forest Service, Department of Agriculture, is continuing the installation of new pulp equipment in local Forest Products Laboratory, including machinery for which bids were recently asked, as noted in these columns. Bids have now been taken for a new pulp beater, in addition to pulpwood grinder, and complete accessory equipment will be installed for increase in the pulp division.

Waynesboro, Va.—The du Pont Rayon Company, 350 Fifth avenue, New York, N. Y., manufacturer of cellulose rayon products, is pushing construction of new addition to mill at Waynesboro, and has superstructure in progress. The new unit will provide for large increase in present capacity and is scheduled for completion at close of the year. It is reported to cost over $600,000, with machinery.

New York, N. Y.—Jacob Iscow & Co., 220 Fifth avenue, New York, paper products, have leased space in building at 15-19 East 26th street, and will use for storage and distribution, and office service.

West Point, Va.—The Albemarle-Chesapeake Company, Inc., and Chesapeake Corporation, affiliated interests, manufacturers of kraft wrapping papers, kraft lined boards and kindred paper stocks, are awarding miscellaneous contracts for expansion and improvements at mills, recently referred to in these columns. Work is starting on a new two-story addition, 75 x 90 ft., and it is understood that other units will be built. Contract for structural steel framing has been awarded to Dietrich Brothers, 220 East Pleasant street, Baltimore, Md., while steel sash will be furnished by the Sash, Door & Glass Company, Sixth street, Richmond, Va. General contract for new buildings and improvements in present structures will be carried out by the John T. Wilson Company, Mutual Building, Richmond. Entire project is reported to cost close to $300,000, with equipment, and will provide for considerable increase in output.

Los Angeles, Cal.—The United States Gypsum Company, 300 West Adams street, Chicago, Ill., manufacturer of building materials, insulating board, etc., has arranged for purchase of plant and business of the Star Roof Corporation, 8430 Quartz avenue, Southgate, Los Angeles, manufacturer of roll roofing and kindred products, and will consolidate with organization. The Star plant will be continued at present location, and operated as a branch of purchasing company for Pacific Coast trade.

Brainerd, Minn.—The Northwest Paper Company, Cloquet, Minn., is planning early construction of new filtration plant for improved water service at mill at Brainerd. It will cost close to $35,000, with equipment. W. H. Kenety is general manager.

St. Johns, Que.—The St. Johns Paper Box Company, manufacturer of paper boxes and containers, is considering expansion at plant, with installation of additional equipment for increased capacity. Program is reported to cost close to $40,000, with machinery. Company is affiliated with the Dominion Blank Book Company, Ltd., same place.

Chandler, Que.—The Premier Pulp and Paper Corporation, lately organized and previously referred to in these columns, is a new interest of Canadian Celanese, Ltd., Drummondville, Que., and will be used as a sulphite pulp manufacturing division for the parent company, with later possible development in paper production. The new company is said to have concluded arrangements for acquisition of the former mill of the Bonaventure Pulp and Paper Company, Chandler, and will occupy at early date. Improvements will be made in buildings and equipment. It is proposed to have the mill ready for service in the Fall. Entire project is reported to cost close to $100,000. Dr. Camille Dreyfus is president of parent company, and R. H. Sperling, manager.

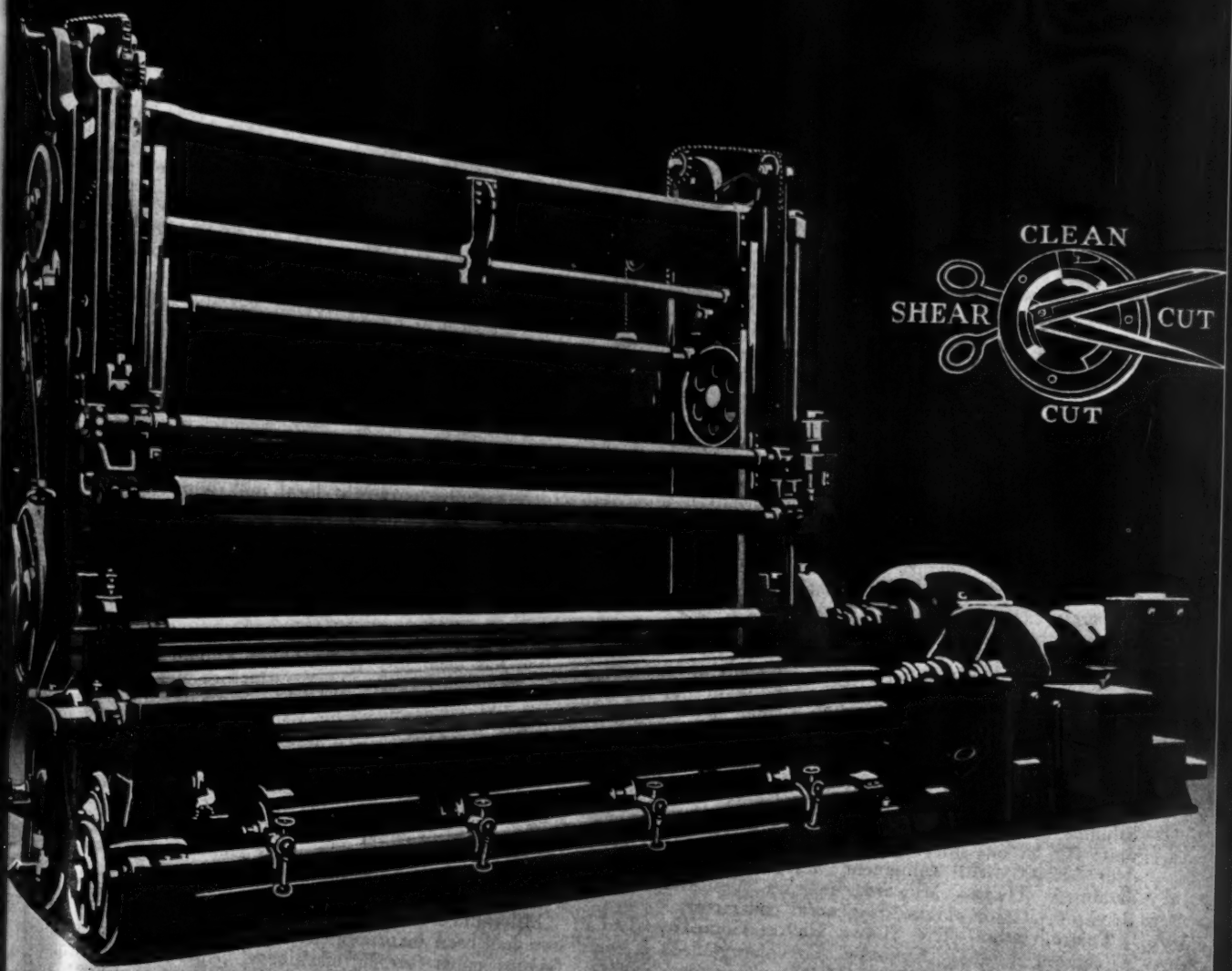
West Point, Va.—The Albemarle-Chesapeake Company, Inc., and Chesapeake Corporation, affiliated organizations, manufacturers of kraft wrapping papers, kraft lined boards and kindred heavy paper stocks, have approved plans for expansion and improvements in plants, including new units for increased production. Additional equipment will be installed. Work is estimated to cost over $300,000, including machinery. Construction contract has been awarded to the John T. Wilson Company, Mutual Building, Richmond, Va., and work will be placed under way at once.

Columbus, Ohio—The Herb Paper Box Company, 344 West Town street, manufacturer of paper boxes and containers, has awarded general building contract to E. Elford & Sons, 555 West Front street, city, for new addition to plant, and will proceed with superstructure at once. It will be two-story and basement, 50 x 128 feet, reported to cost close to $25,000, with equipment.

Boston, Mass.—The A. & P. Corrugated Box Company, 42 Plympton street, manufacturer of corrugated boxes and containers, has arranged for lease of two floors in building at 33 Troy street, and will occupy at early date for local plant. Present plant will be removed to new location and increased capacity arranged.

Kalamazoo, Mich.—The Kalamazoo Vegetable Parchment Company has plans under way for new addition to mill at Parchment, near Kalamazoo, to be two-story, 80 x 120 feet, designed primarily for storage and

WINDERS AND REWINDERS



SAMUEL M. LANGSTON COMPANY

CAMDEN, NEW JERSEY

distributing service. It will cost close to $30,000, with equipment. M. C. Billingham, Kalamazoo, is architect.

East Palestine, Ohio—The Grover Paper Company, recently referred to in these columns, will be known as the Grover Paper Converting Company, in accordance with state incorporation charter, recently filed. New company is capitalized at 500 shares of stock, no par value, and will specialize in production of spiral wound paper containers and kindred paper goods. As previously reported, it has taken over a local building and will develop sizable production schedule at early date. D. E. Grover and D. H. Benninghoff head the new organization.

St. Louis, Mo.—Fire recently damaged a portion of storage and distributing plant of the Kolker Paper Stock Company, 1700-02 O'Fallon street. An official estimate of loss has not been announced. The damage will be replaced at early date.

Chicago, Ill.—The Container Corporation of America, Inc., 111 West Washington street, manufacturer of corrugated and other paper boxes and containers, is awarding miscellaneous construction contracts, through the Avery Brundage Company, 11 South La Salle street, general contractor, for sub-structure, superstructure, roofing, etc., for new one-story addition to power house at plant on North Ogden avenue, previously referred to in these columns, to be one story, 30 x 70 feet, reported to cost close to $75,000, with equipment. It is proposed to have unit ready for service in the fall. The Stone & Webster Engineering Corporation, 49 Federal street, Boston, Mass., is consulting engineer.

Springfield, Mass.—The Holyoke Card and Paper Company, Springfield, manufacturer of card and paper specialties, has concluded arrangements for a merger with the Roto Engraving and Printing Company, Middlesex, N. J. The plant of last noted company is being dismantled and will be removed to Springfield, where expansion will be carried out and operations concentrated in the future.

Brooklyn, N. Y.—The Caledonia Paper Novelty Company, Inc., recently organized with capital of 200 shares of stock, no par value, is said to be planning early operation of local paper converting plant, for manufacture of a line of paper goods. New company is represented by John P. Chandler, 70 Pine street, New York.

Cleveland, Ohio—The Industrial Rayon Corporation, West 98th street and Walford avenue, manufacturer of cellulose rayon products, has reopened negotiations with city for construction of a new sewer in vicinity of its plant, preparatory to construction of large new mill addition. Proposed structure will be of multi-story type, estimated to cost in excess of $1,000,000, with equipment. Christian, Schwarzenberg & Gaede, 1836 Euclid avenue, city, are architects. Hiram Rivitz is president.

Philadelphia, Pa.—Fire recently damaged a portion of storage and distributing building at plant of the Container Corporation of America, Inc., Fountain and Nixon streets. An official estimate of loss has not been announced. The damage will be replaced.

Worcester, Mass.—The Sherman Envelope Company, 60 Prospect street, has begun construction of new paper converting plant, recently referred to in these columns, and will push work to early completion. New unit will be one-story, 165 x 200 feet, reported to cost over $40,000, with equipment. Large capacity will be arranged. Thomas Mulcare, Inc., 66 Western avenue, Brighton, Boston, Mass., is general contractor.

Tokyo, Japan—The Showa Rayon Company, Ltd., Ajinomoto Building, Kyobashi, Tokyo, organized a few months ago with capital of 5,000,000 yen (approximately $1,500,000), to construct and operate a new cellulose rayon mill, has plans maturing for plant on large tract of land at Hiroshima, Japan, to consist of several units, with laboratory, power house, machine shop, pumping station and other mechanical departments. New mill will be electric-operated and equipped for initial capacity of about 10 tons per day. It is expected to be ready for service next Spring. Plant will cost in excess of $700,000, with machinery. The new mill will also have a division for the production of fiber, the output to be used by an affiliated interest.

Napanoch, N. Y.—The Rondout Paper Mills, Inc., manufacturer of tissue and other paper, is said to be planning construction of new addition to mill for large increase in present capacity. Cost close to $100,000, with equipment. William P. Kelly is president and treasurer.

Circleville, Ohio—Container Corporation of America, Inc., will rebuild and improve the machine department at local strawboard mill, recently damaged by fire, including two large paper-making machines. An official estimate of loss has not been announced, but reported over $17,000. C. K. Hunsicker is manager at plant. Company headquarters are at 111 West Washington street, Chicago, Ill.

Chester, Pa.—The Scott Paper Company, manufacturer of tissue papers, has let general contract to David M. Hunt, 1700 Sansom street, Philadelphia, Pa., for alterations and improvements in mill. No estimate of cost announced. Work will be placed under way at once. Frank R. Watson, Edkins & Thompson, Architects' Building, Philadelphia, are architects.

Dayton, Ohio—The Central Ohio Paper Company, 131 East Sixth street, has secured low bid from Henry Stock & Son, 53 Brandt street, Dayton, for extensions and improvements in local storage and distributing plant, and will place award at early date. A one-story addition will be built, 33 x 60 feet, for garage, loading and other mechanical service. Entire project is estimated to cost about $25,000, with equipment. Harry G. Allen and Howard T. Collingwood, Grand Theater Building, Columbus, Ohio, are architects. Headquarters of company are at 226 North Fifth street, Columbus.

New York, N. Y.—The Majestic Paper Corporation, 138 Franklin street, has filed notice of increase in capitalization from $100,000 to $127,000, for general expansion in operations.

Drummondville, Que.—Canadian Celanese, Ltd., manufacturer of cellulose rayon products, is considering an expansion program at local mill, with installation of additional machinery for large increase in present capacity. Details and estimates of cost are now being determined. Company is reported planning increase in capitalization to provide funds for project.

New Companies

New York, N. Y.—The Envelope and Paper Corporation has been incorporated with capital of 200 shares of stock, no par value, to manufacture and deal in envelopes and other commercial paper goods. Incorporators of new company are Samuel Tannenbaum, 522 Fifth avenue, New York, and Louis Holman, same address.

Union City, N. J.—The Progressive Print Cutting Company, Inc., has been chartered with capital of 150 shares of stock, no par value, to manufacture print blocks, wallpaper print specialties, etc. The incorporators are Herbert Stroever and Alexander Gunder. New company is represented by William Stickel, Jr., 665 Bergenline avenue, Union City.

Milwaukee, Wis.—The Badger Automatic Corporation has been incorporated, capital not stated, to manufacture paper-feeding machinery, paper-handling equipment, etc. The incorporators are Bernard S. Elliott and H. J. Hanauer, both of Milwaukee.

LOCKWOOD'S DIRECTORY

OF THE PAPER AND ALLIED TRADES

F O R 1 9 3 4

A complete, up-to-date reference book of the paper industry, for the busy executive who must have reliable information at his finger tips.

Entire contents classified under separate headings for the United States and Canada, alphabetically and geographically arranged by states.

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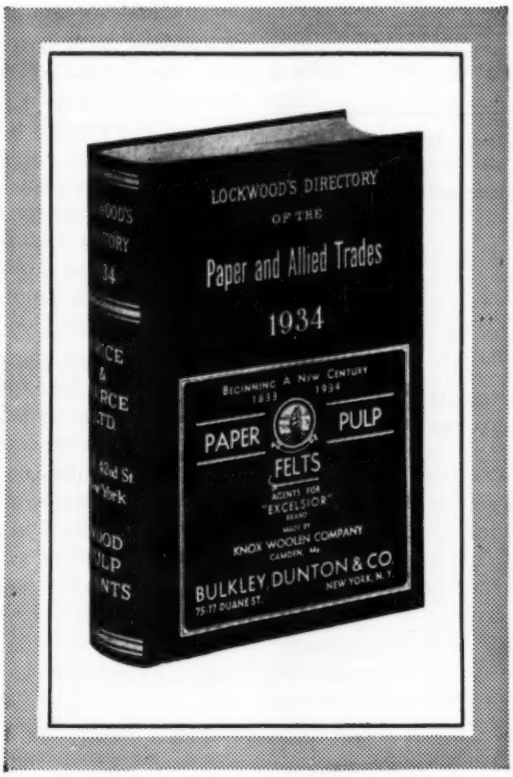
Paper Merchants, United States
Paper Stock and Rag Dealers
Paper Bag Manufacturers
Paper Box Manufacturers



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COMING EVENTS

Technical Association of the Pulp and Paper Industry, Fall meeting. Headquarters Multnomah Hotel, Portland, Ore., September 10-13, 1934.

Paper and Pulp Section, National Safety Council, annual convention, Hotel Statler, Cleveland, Ohio, October 1-5, 1934.

CONSUMPTION OF PAPER RISING ABOVE LAST YEAR'S SHOWING

Encouraging reports relating to conditions in the paper industry are becoming more general in practically all divisions. Code regulations, which were instrumental in stabilizing prices, greater interest in advertising programs, and the many new uses of paper in commerce and industry have been factors contributing to recovery movements in this industry. Consumption of paper is running steadily ahead of last year's, newspaper advertising lineage for the first six months being up 16.7 per cent from the 1933 total, while magazine advertising lineage rose nearly 30 per cent, and wrapping, book, and writing papers were used in quantities from 5 to 20 per cent larger. Most of the manufacturers reported that output increased from the close of 1933 to the end of the first quarter, but that a recession started in May which reached its low for the year in July. Since that time, schedules have been widened in some divisions.

In spite of the recession in July, wholesale distribution of paper and paper specialties ranged from 20 to 30 per cent larger than for the comparative seven months of 1933. While consumption is upward, and prices for all grades, with the exception of newsprint, have risen from their lows of the early part of 1933, production costs also have increased, which may affect the profit possibilities of the leading companies. Thus far this year, however, the losses of 1933 have been halved by some of the most important producing units, while many of the small producers have shifted balances to the right side of the ledger for the first time in four years, according to a survey of the paper industry, which has just been completed by Dun & Bradstreet, Inc.

Since the middle of the second quarter, the comparison of production with that for the corresponding months of 1933 makes a less satisfactory showing, as at that time the rush to build inventories carried output 25 to 35 per cent ahead of 1932, and in some divisions the widest schedules in several years were reached. In the tissue division, production both in value and units still is ahead of that of last year, even though there was a decided spurt in sales in July, 1933, due to the anticipated advances in prices, as a result of the NRA.

Output of newsprint in the United States and Canada for the first six months of 1934 was the highest for any six months' period since 1930. The production for both countries reached 1,759,118 tons, compared with 1,350,989 tons in 1933, a gain of 408,129 tons, or 30.2 per cent. While this exceeded the output for the first half of both 1932 and 1931 it fell below the total of 1,970,449 tons in the comparative period of 1930. Canadian mills in June produced more newsprint than in any June of recent years, topping even the high points of 1929 and 1930. A total of 229,637 tons was produced, compared with 171,419 tons in 1933, an increase of 58,218 tons, or 33.9 per cent. In June, 1929, production was only 225,055 tons.

During the first quarter of the year, most of the wholesalers reported heavy increases in orders, the average being about 35 to 50 per cent above that of 1933. Since April, however, there has been a gradual decrease, with the result that the general average increase for the first seven months has been reduced to 20 to 25 per cent. In some of the individual items, the gain has been larger, as printing paper sales were around 30 per cent higher than a year ago, while wrapping paper went into consumption in quantities about 45 per cent larger.

The truckmen's strike in some cities of the Northwest and the tie-up of shipping on the Pacific Coast for nearly three months reduced sales temporarily in those districts. In the Southwest, where the drought has passed its fourth month, sales have been on the decline since the latter part of June. The losses in these sections, however, have been counter-balanced by the gains in other parts of the country, as in many centers of the South sales have averaged 50 per cent larger than those during the corresponding seven months of 1933.

The recession reported in orders during July has been checked, and demand is beginning to widen for nearly all grades and classes of paper. More orders have been received for wrapping paper since the heat wave broke, while the call for specialties for resort and roadside stand purposes was the largest in several Summers; in some items, sales were double last year's. Shipments of fruit wrappers to orchardists in the Pacific Coast territory increased 20 to 25 per cent, but many of the orders booked

last Spring in the Middle West were cancelled because of the drought devastation. New uses for paper products have resulted in increased sales, especially among distributors of wax wrappers for bread and water-proof protection for fabric containers.

There has been little change in prices since the adjustment made earlier in the year, the level holding steady at 10 to 35 per cent higher than a year ago. On most grades of book and writing papers, prices are higher by 20 to 30 per cent, while on kraft and wrapping papers the average is up to 20 to 25 per cent. The price of newsprint continues at $40 a ton, at which figure it has remained constant since April, 1933, when it was reduced from $45. Fortunately, the practice of dumping paper on the market regardless of price, which prevailed for so many years, has been almost entirely discontinued.

In almost all divisions of the trade collections have surpassed the status of 1933 by a substantial margin, and there has been considerable thawing out of frozen accounts since the early part of June. The slowness which has developed of late in some of the country districts is not regarded as an unfavorable feature, as this usually occurs immediately preceding the Fall crop harvest.

The curtailment of bankruptcies during the third and fourth quarters of 1933 has been continued thus far in the current year; and, based on the diminished returns for the first seven months, the 1934 totals for both number of defaults and liabilities promise to be the smallest recorded since 1931. From January to July, inclusive, only 4 failures were reported for paper manufacturers, while in the distributive divisions the total was 12, with the monetary loss $664,517 and $198,326, respectively.

This continues the favorable showing of 1933, when the number of failures for the entire industry fell to 26 from 44 in 1932, a decline of 40.9 per cent, while the involved liabilities were reduced to $1,944,189 from the record high of $2,613,450 in 1932, a decline of 32.4 per cent.

Paper Importers Requested to Sign Code

J. A. L. Möller, of the Möller Products Corporation, and acting chairman of the Paper and Paper Products Group of the Master Code for Importing Trades, writes are follows:

"Will you request importers of paper and paper products who subscribe to the PAPER TRADE JOURNAL to put themselves in touch with the General Importer's Code Authority at 45 East 17 street, New York. Telephone, Algonquin 4-3720. Am reasonably sure that many of those who do not know of the signing of the Code will want to know about it, since it is certainly the logical Code for an importer to be under.

"Please note that while, primarily, firms whose import activities represent the larger part of their business are being enrolled under the Code, all firms doing any appreciable amount of import business will be eligible, even though the domestic business is by far the largest part of their business. They will only be charged for those of their personnel, I believe, who conduct the import end of their business."

Manufacture of Kraft in France

The manufacture of kraft paper in Southwest France is of relatively recent origin. The first company was organized in 1924 and began production in 1926, according to Consul Harold D. Finley, Bordeau. Machinery and equipment were imported from Sweden and the first mills were placed in operation by Swedish engineers. At first attempts were made to manufacture paper from the maritime pine in the same manner as kraft paper was produced in Sweden, but many difficulties were encountered and it was found necessary to modify the process as the percentage of resinous content was found to be much higher in the French wood than in the Scandinavian.

Stronger solutions of cooking liquors were required and the time of cooking was prolonged with the result that the tensile strength of the kraft paper produced in France was inferior to the imported Swedish kraft. The shortness of fiber of the maritime pine as compared with the Scandinavian also contributed to lower the quality of the French product. Several of the French companies found it cheaper to import wood pulp from Sweden than to produce their own pulp from the maritime pine.

A high protective tariff and a quota on imports of kraft paper now enables the French companies to continue in operation and even increase their output. Due to several years experience in adapting the Swedish processes to the maritime pine the French mills now in operation in the Bordeaux consular district have improved the quality and tensile strength of their product manufactured exclusively from the domestic wood. A special tax of 3 francs (20 cents) per 100 kilos (220 pounds) is assessed on imported pulp to be used in the manufacture of kraft paper and the French manufacturers receive a bounty of 10 francs (66 cents) per 100 kilos on kraft paper made from French wood. It is estimated that the kraft mills in Southwest France consume approximately 130,000 to 140,000 metric tons of maritime wood annually. The five mills in operation have an estimated annual output of 36,000 to 40,000 metric tons of kraft paper. During 1933 only three of the mills actually produced kraft, the aggregate output for the year being estimated at 25,800 metric tons.

Drought Conditions Affect Mills

[FROM OUR REGULAR CORRESPONDENT]

HUDSON FALLS, N. Y., August 27. 1934—Drought conditions are affecting several paper mills in this section and the upper Hudson River is at its lowest flow in many years. Nearly 90 per cent of the flow here and at Glens Falls is being supplied by the recently constructed Sacandaga reservoir which is now proving of immense value to paper mills in maintaining operations. In order to maintain the proper level in the manufacturing section of the river between this village and Troy the huge reservoir has been drawn down 49 per cent and is now 51 per cent full. Employment in paper mills and other industries would have been seriously affected in power plants if the water supply now coming from the Sacandaga and Indian Lake reservoirs was not available. Without this supply it is claimed that power plants would only be able to operate a few hours daily. In order to stop the heavy outflow from the Sacandaga reservoir the International Paper Company at the request of the Hudson River Regulating Board increased the discharge of water from the Indian Lake reservoir to 600 cubic ft. per second. Without the flow from the two reservoirs it is claimed that a new low water record in the river would have been established and incidentally these water supply sources have saved considerable for mill owners from a financial standpoint.

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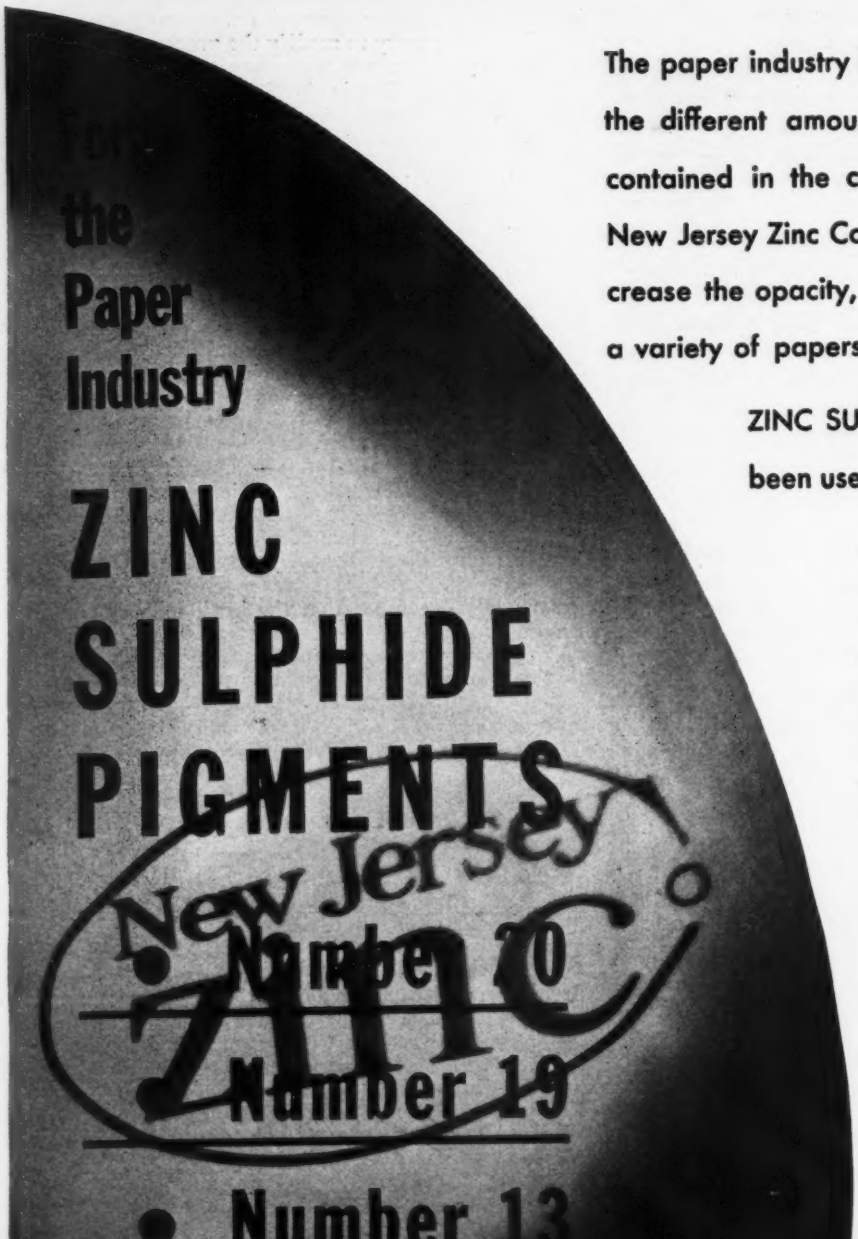

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Section of the
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Edited by Ronald G. Macdonald, Secretary

Instruments in the Paper Industry*

By W. V. Wright

The industry, in which the majority of those present this evening are engaged, is one which is largely founded upon and governed by the science of measurement. The more scientific industry becomes, the greater the number of magnitudes and rates, quantities, and prices, it must measure. It is only by applied measurement that it is possible to determine, not only the progress which the industry is making, but also what progress yet remains to be made. Measurement is obviously the first step to be taken before any reliable basis can be established from which to work; the next step, from the engineer's viewpoint, is control. In a technical sense, the better the standard of measurement the more closely is the control likely to reach the theoretical maximum standard of efficiency. In fact, one could say that efficient control without measurement is an engineering impossibility.

What are industrial instruments, and in what manner do they assist in establishing that standard of measurement necessary for efficient control? The outstanding characteristic of industrial instruments is that, regarded as an investment, they yield practical and substantial dividends determinable in pounds, shillings, and pence, in so far as they provide the information which is vital to efficient and scientific control, and thus materially assist in the elimination of waste—that intangible something which most engineers spend the greater part of their time and energy in combating. I would like to make clear at this stage what are the functions of industrial instruments, and to correct, if possible, certain erroneous ideas which appear to have a certain hold among engineers when their thoughts are turned to instrument equipment. I have just stated that the outstanding characteristic of industrial instruments is that they yield substantial dividends, if regarded from an investment point of view. Usually all that the instrument will do is to measure and to give information which, if properly used, can be turned to good account, but which if only regarded in the light of a measurement, will not lead to worth-while economies. In other words, the instrument in itself can give no savings, but, if the information provided by it is closely followed by systematic control, savings out of all proportion to the capital cost of the measuring device can often be obtained. I do not propose to make any dogmatic statements, but would suggest, as a basis for further consideration, that for every process there is one, and one only, "best set of conditions"; reference is made, of course, to measurable conditions. The use of measuring devices should enable the engineer to establish what are the best conditions for his particular requirements and, having established these, the operators have only to continue repeating them from the guidance given by the reading instruments.

I, of course, appreciate that, in all these considerations, the process itself must come first—in other words, a paper mill must make paper; that is its primary job. The equipment, in which the process is carried on, must come next, as it is one of the essentials. This equipment cannot function by itself, it requires regulation; and it is in the effort to determine the best form and, shall we say, speed of regulation that the application of instrument equipment is so vital. Today the progressive industrial engineer realizes that there is one way of determining the one "best set of conditions," and that is by measurement. The use of instrument equipment in the paper industry is one which can be regarded from many aspects and, in developing this paper, I have tried to cover as much ground as possible. Most engineers engaged in the industry have different views with regard to the value of such equipment for their conditions, and these views are no doubt largely influenced by the many different circumstances under which they are operating. In some cases, the engineer's whole effort is spent in endeavoring to keep the plant running at all, apart from doing so efficiently. However, I believe that it is now generally recognized among paper mill engineers that the use of instrument equipment has a very definite value. There has, undoubtedly, been a decided increase in the use of instrument equipment in almost every industry during the past ten years, and, in my experience, the paper industry is certainly to the forefront in this movement. Whether this is due to the natural march of progress, or whether it has been largely forced by the present-day struggle to make ends meet, is a question for which there is probably no comprehensive answer. The object of this paper, therefore, is to try and show in what directions instruments may be applied with definite advantage, not only to the engineering side of the industry, but also to the management and to the operatives engaged in the running of the various processes. For the purpose of this paper, I propose to regard the complete mill as so many departments, each with its own peculiar problems, and each with its own particular requirements in the matter of instrument equipment.

* Paper read at South of Scotland Division of the Technical Section of the Paper Makers Assn. of Great Britain and Ireland.

Boiler House

Here we have a department which is virtually a factory in itself, producing one of the most essential of the raw materials required in the manufacture of paper. Its sole function is to produce this raw material, that is, steam, in such quantities as are required by the various process departments, and at as low a cost as possible. If, for a moment, we could imagine the boiler house owned by some other company which is selling its product to our mill, there is no doubt that its supplies would be checked, weighed, and paid for only after we had satisfied ourselves that not only was the quantity in accordance with the bill, but that its quality was up to specification. If a condition like this existed, the steam producer would undoubtedly have to maintain very close scrutiny over every item of his expenditure; if he did not, and if he still continued to make profits, he could only do so at the expense of the user: in other words, by charging a high price for his product. The mere accident that the steam production factory and the paper making factory belong to the same board of management does not in any way affect the economics of the situation. Let us now consider what measurements are vital to efficient and cheap steam production.

The three raw materials required in the production of steam are water, coal, and air; each is so important that to ignore proper measurement and control of any one of the three can result in serious loss. Due to the comparatively recent development of the back-pressure and pass-out turbine, many paper mills have now been equipped with high-pressure water-tube boiler plant. Nevertheless, probably the majority are still operating from Lancashire boiler equipment at lower pressures, and with process steam requirements being met direct from the boiler steam mains. For our purpose, it makes little or no difference, as the fundamentals are the same. When it is borne in mind that, in a fair-sized boiler house evaporating, say, 30,000 to 40,000 pounds per hour of water, on an average, throughout the working week, a drop in efficiency of 10, or even 5 per cent, can mean some thousands of pounds per annum in additional fuel cost, it will be readily realized that the necessity for maintaining the boiler house at its maximum operating efficiency is one which cannot be ignored. In practice, the greatest loss in any boiler house is, undoubtedly, due to chimney losses. Therefore, it is essential so to measure the air supplied to the furnaces that it can be controlled to give the least possible loss in the waste gases. This indicates the necessity for two measurements, that is, waste gas temperature and CO_2; the CO_2 being an inferential measurement of the air supply to the furnaces or, if you like, combustion efficiency. These two instruments should, preferably, be of the indicating and recording type; the indicators being primarily used by the operators for noting the conditions of the moment, and the recorders for the use of the engineer, not only for record purposes, but also to enable him to see how combustion efficiency has been maintained. A point arises, which it is necessary to consider here. From the operator's point of view, it is hardly enough simply to give him these two instruments: some means are necessary whereby he can be guided in the adjustments which he must make in order to get the best conditions. The instruments required in this connection usually consist of draught gauges: the number of these gauges and their location is a matter entirely dependent upon the class of boiler plant. The use of the foregoing instruments now gives us a guide to combustion efficiency; the next point to be considered is overall efficiency. It will be appreciated that combustion efficiency does not necessarily mean high overall efficiency, although the latter cannot possibly be obtained without the former. For the maintenance of high overall efficiency, it is necessary to maintain a continuous measurement of the other two raw materials—coal and water.

Coal

This may be measured either by a weighing machine installed at the boiler house or by coal meters on the boilers themselves; the choice depends upon the local conditions and the class of boilers in operation. I suggest it is not enough to accept the Railway Company's weight bills, as these may have been made out days before the coal reaches the boiler house with, in many cases, appreciable alteration in weight.

Water

This should be measured continuously to insure that no undue wastage is taking place, due to excessive blowing-down of boilers, leakages in pipe lines and in boilers, etc. In addition, the installation of a water meter gives us a means of comparison with the equipment which we will deal with later for measuring the steam output of our boiler house. The temperature of the water must also be checked continuously, to insure that it is being fed to the boiler plant at the temperature best suited to the need of the plant.

The next measurement is, of course, the output of steam from the boiler house. For purely checking purposes, it would, probably, be sufficient to have one meter measuring the total output; but, as one of the great factors in insuring maximum efficiency as well as reducing repair bills, etc., is to insure that each steam-producing unit is operating at its most efficient rating, it is found in practice, highly desirable to equip each unit with its own load indicator. These indicators give the operator immediate indication of the distribution of the load over his units. For the engineer, recorders are required to keep him advised as to the operation of each boiler unit, and, for costing purposes, integrators should be provided. The quality of the steam should be measured, and the temperature recorders are advisable for this measurement.

For the purposes of the operator, then, who is primarily responsible for maintaining efficiency, it will be seen that suitable equipment consists of boiler load indicators, draught gauges, and CO_2 indicators. For the purpose of the engineer, who requires recorded measurement of the daily operation of the plant, records are required of CO_2, waste gas temperature, steam flow, and water flow; and, for the purposes of the management side of the industry, who probably require to know the cost of manufacturing a thousand pounds of steam (or whatever figure they may determine) it is necessary that the steam meters and water meters are fitted with integrators, if the engineer has not to be put to the extremely laborious task of trying to planimeter charts daily. When a boiler house is equipped with instruments such as I have outlined, there is no reason why the engineer should not be able to determine the maximum efficiency of which his boiler house is capable; and, having determined this, he is in a position to check its efficiency from day to day and, if there is any serious falling off, it can be located and corrected before any serious loss in coal is incurred.

Power House

In considering instrument equipment for the power house, it is essential to keep before us the real function of the power house. If the mill is not equipped with either back-pressure or pass-out machines, then it is only necessary to insure that steam is being supplied to the prime-mover at the correct pressure and temperature; and

a continuous measurement of the quantity is required to see that the efficiency is being maintained at the highest point of which the plant is capable. Comparison of the steam used to units generated, at frequent intervals, will denote any falling off in this direction. When the plant is of the pass-out type, however, it is necessary to consider the question in greater detail. In this case, the prime-movers are really acting as reducing valves and de-superheaters, and the production of electrical energy is a by-product of this process. The efficiency of this type of power house is largely dependent upon the balance that is obtained over the plant. In other words, the most efficient condition is when all the steam going into the prime-mover is passed out as process steam for the mill: however, the design of the station is outside the scope of this paper. For our purpose, it is necessary to consider in what way measurements are beneficial. It will be readily appreciated that, with the many variables in the process department, it is necessary that measurements should be taken of the total steam fed to the power house, the steam passed out to the mill, the condensate, and the make-up steam. A comparison between the various measurements will keep the engineer informed, as to not only the general efficiency of his prime-movers, but also on the general balance being maintained on his whole power house plant. Auxiliary measurements, such as main supply steam pressure and temperature, and pass-out steam pressure and temperature, are also necessary. A point which is often overlooked in the power house is the measurement of circulating water for condensing purposes. In some cases, this water has to be paid for, but, in any case, the measurement and control of it will be found a good investment.

So far we have dealt with those sections of the plant which are responsible for the production of steam and power, and with the problems of measurement particularly bound up with them. In this section it is proposed to deal with the various process departments or the consuming departments. In so far as these departments are now essentially engaged in the actual process of paper making, and are largely operated by operatives whose opportunity is limited for becoming acquainted with any technical considerations other than those applying directly to the process which they are controlling, it is necessary to consider the instrument equipment of such a type that the engineer or supervisor is continually being kept conversant with the manner in which his raw materials are being used. For the purpose of this paper it is proposed to deal with the various processes, covering the field of operations up to the time the stock enters the machine room, in a general way, rather than to select any particular process. The various classes of paper produced all have their own particular problems and processes, so that it would be impossible to cover them all in detail in the scope of a single paper.

Digesters

Let us consider the boiling, or digesting, department for a moment. In this department the raw materials usually consist of grass, rope, rags, or jute (depending upon the paper to be made), steam, for cooking purposes, liquor, and water. I propose to reiterate that, for each cycle of operations, that is, filling the boilers, cooking, washing, there is a "best set of conditions," or, if you like, a time-temperature curve which, when once established by the use of suitable instruments, it should be possible for the operator to repeat more or less continuously.

First of all, the steam entering the department should be checked as to quality, that is, pressure and temperature, and a record of these values maintained, so that the operator is immediately made aware of any serious change in the steam condition. Each digester should be equipped with a recording thermometer and a recording pressure gauge to show up any irregularity in the cooking process. It should be noted that the thermometer will not show a true temperature, due to the mass of pulp in the digester, but it will show the rate of temperature increase. Proper steaming can be maintained by a steam flow recorder on each digester, and it should be possible to duplicate cook after cook by admitting steam at a predetermined rate, and by reproducing on each cook the time-temperature curve of the temperature recorder. It has, apparently, been found in practice that measurement and control, as outlined above, can result in steam savings of as high as 10, and even 15, per cent. In so far as the filling operation is concerned, if the liquor storage tank is equipped with a level recorder or indicator, this will enable the operator to admit the correct quantity of liquor to each digester.

Washing

Large quantities of washing water are required for washing the pulp from the digesters. An integrating and recording water meter will provide a record of the quantities used, and, also, the time taken in the operation. An excess of water means increased consumption of steam in the liquor evaporators, and a deficiency means that all the caustic has not been removed from the pulp. A recording thermometer on the wash-water line will enable the operators to control the quantity used in relation to the temperature of the wash-water; so that this department can be efficiently controlled, therefore, it is suggested that the instruments outlined are essential. In addition, a steam meter, of the integrating and recording type, is recommended for the main steam supply, so that the total quantity used can be continuously under check.

Reclaiming Caustic from Liquor

The purpose of this department is to save the alkali in the black liquor, so that a minimum of fresh soda ash is required to make a caustic liquor of proper strength. In order to operate the evaporators at maximum efficiency, it is necessary to know the amount of work done, as indicated by the quantity of black liquor flowing to the evaporators, the amount of water removed, and the amount of heat supplied, as indicated by the quantity of steam used, and the temperature of the steam and condensate.

Required

Weir Meter Specific Gravity Recorders.—A water meter, and a specific gravity recorder, on the liquor line to the evaporators; and a specific gravity recorder on the line to the rotary furnace, will provide all the information required to check the work done in the evaporators.

Steam Meter, Duplex Thermometer.—A steam meter and a duplex thermometer, to record the temperature of the steam to the first effect and the temperature of the condensate, provide all the data necessary to check the efficiency of the evaporators.

Pressure Gauge, Vacuum Gauge.—Pressure or vacuum gauges, or combination gauges, provide a guide for the operator to regulate the operation of each effect.

Level Gauge.—A level gauge is required to show the quantity of concentrated black liquor in storage before the rotary furnace.

Burning Black Ash

The rotary furnace is, in effect, an ordinary boiler furnace in which the concentrated black liquor is the

fuel. The non-fibrous part of the wood is partly burned and carried off in the stack gases; the balance, together with the alkali, leaves the furnace in the black ash. Inasmuch as the hot gases can be used to generate steam in a waste heat boiler, the same control instruments are required as for an efficiently operated boiler.

Black Ash Furnace

CO_2 Recorder Flue Gas Pyrometer Draught Gauges.—A CO_2 gas analyser, for recording the per cent of CO_2 in the stack gases; a pyrometer for recording flue gas temperature, and suitable draught gauges in the fire-box, provide the instruments necessary for efficient combustion.

Pressure Gauge.—The boiler must be operated at constant pressure, so that the steam may be delivered to the main header, or used in processes; therefore, a recording pressure gauge is required.

Steam Meter.—A recording and integrating steam meter enables the furnace operator to know just how much steam is being produced, and ensures the furnace department getting credit for every pound of coal saved.

Although the fuel used in the rotary furnace would, otherwise, be a waste product, it is important to generate as much steam with it as is possible, or more coal must be burned in the boiler plant.

Bleach Tanks

Water Meter.—A water meter is required to record the amount of fresh water used to bleach the black ash. It is desirable to use enough water to dissolve the soda ash, so that a minimum is lost, but not so much as to dilute the green liquor to the point where an excess of steam is required to boil the liquor in the caustic tanks.

Bleaching Department

In this department it is suggested that temperature measurement requires careful control, if loss of chlorine is to be avoided; this would indicate the necessity for a temperature recorder on the bleach tank to ensure correct temperature. In addition, if each water line is equipped with a thermometer and flow recorder, it should be possible for the operator once more to continue repeating the time-temperature curve for the department. The same instruments are suggested for the actual operation of bleaching the stock. In addition to these, a water meter, installed so as to integrate and record the quantity of wash-water used, will enable us to determine the total water consumption of the department. The steam used for heating purposes should also be measured and controlled, in accordance with the temperature which it is desired to maintain.

Beater Room

In this department it is suggested that a steam meter should be installed so that all steam used, either in the beaters or for heating, is accounted for: the same remarks apply to water supply. In addition, I suggest that a recording level gauge on the beater chest provides a satisfactory means of consistency control. If the consistency is controlled in the beaters by careful measurement of pulp and water, it can be maintained between beater and paper machine by the proper admission of water to the stock in the beater chest after dumping. I have no personal experience as to the part played by temperature in the beating operation, but propose to quote an American authority on this point.

"During the beating of the pulp it is now quite generally recognized that it is highly desirable to have a continuous record of pulp temperatures. This will indicate the intensity of the beating and clearly establish the duration of each beater cycle, visualizing the rate of temperature rise and showing whether the beater roll has been let down too suddenly or whether, by any mischance, the cycle may have been interrupted. The temperature of the pulp during the beating process also greatly influences the degree of hydration of the pulp, and also of the final characteristics of the paper which may be made from it. Although the beating operation does not lend itself very well to automatic control, or, perhaps, for such very reason, since the permissible temperature tolerances are quite close in the preparation of quality stock, recording thermometers are used to decided advantage to guide the machine tender in keeping the pulp temperature within the proper limits. The greatest danger in beater operation is to allow the temperature to become too high. The point below which the temperature should be kept, in ordinary beating operations, though considerably influenced by the class of stock beaten and with established mill practices, is customarily placed at from 90 to 130 deg. F. On color work, however, it is sometimes necessary to raise temperatures to 190 or even 200 degrees in order to make sure that the color is thoroughly mixed and cooked into the pulp. The advantages accruing through the use of these temperature recorders in such service are obvious, for it is the information they furnish which enables the beater tender to produce stock close to sample and specification. The visible records also measure the day-by-day production of each crew on the various grades of paper produced, for, each time a dump is made, the recording graph provides a distinctive telltale drop."

Machine Room

When we consider that something like 3 to 4 pounds of process steam per pound of paper produced are required for drying operations, it will be readily agreed, I believe, that the scope for careful measurement and proper control is large, indeed. Careful control in this department is vital if we are to secure anything like the advantage we should from the installation of measuring equipment. Let us consider, then, what measurements are necessary and in what manner they will assist us in arriving at the most economic point of operation.

First of all, the operator should have information as to the quality of the steam entering the machine room: a temperature and pressure recorder will provide this. He should also know that the correct vacuum is being maintained on the wire suction-boxes and rolls to ensure that the stock is not going into his driers and presses with too much moisture: vacuum gauges will provide this information, and will also denote to the engineer any falling off in efficiency of the vacuum system. It is essential that the steam supply to the driers is continuously in view of the drierman, so that its rate of flow to the driers can be maintained at the predetermined rate which has been established as best for the conditions. This points to the necessity for a large dial rate-of-flow indicator, so located that it is in constant view of the drierman: this is one of the most important steam measurements in the mill. Without it too much steam may be passed into the driers, with consequent wastage and injurious effects on the vacuum system, as well as producing a product with too little moisture content. In view of this importance of this measurement, it is desirable to have integrators and recorders working in conjunction with the indicators so that the operative can be checked up by the supervisor or engineer at any time. Many instances can be given of large economies effected by this measurement, and it is one which is made by, probably, the majority of the paper mills today. In addition to providing information as to the quantity of steam used for drying purposes, the record will also give valuable infor-

mation as to paper breaks, times the machine is stopped for cleaning felts, etc., etc.

In addition to this steam supply measurement, I suggest that there is scope in the machine room for additional measuring equipment along the following lines:

1. PRESSURE GAUGE: The supply header should be equipped with a recording pressure, vacuum, or combination gauge to show the pressure on the driers. This pressure should be as low as possible, because the sheet should be dried at a low temperature for minimum shrinkage and maximum strength.
2. DUPLEX THERMOMETER: A duplex thermometer will record the temperature of the steam in the supply header, and the temperature of the condensate.
3. PRESSURE GAUGE: A recording pressure, vacuum, or combination gauge should be provided to show the pressure in the condensate of return header.
4. SURFACE PYROMETER: A portable surface pyrometer will enable the mill to check periodically the temperature of each drier, and will locate air-bound or water-logged driers.

If each machine is equipped with the above-mentioned instruments, it will be possible at any time to check the drier efficiency.

A water meter, of the integrating and recording type, will provide information as to the quantity used in the machine room for washing felts, etc.

Another direction, in which practical economy is often possible through continuous measurement, is that of the provision of steam for heating purposes. Arising out of the drying process is the problem of maintenance of a suitable humidity in machine rooms, and the prevention of condensation and consequent damage to paper by falling moisture from the relatively cold roof. In some mills this difficulty is overcome by the provision of suitably run steam pipes for roof warming purposes. In other mills, large quantities of heated and relatively dry air are forced to the roof and below the drying rolls; whilst exhaust fans handle the outlet of moisture-laden air, these fans taking their suction from hoods fitted over the dry ends of the machines. In both cases, the supply of steam to heating pipes, air heaters, and the heated air are controlled in most mills more or less intelligently by the men deputed to the task. It is suggested, however, that it would be preferable to introduce recording flow meters, for the reason that these would insure automatic supervision through accurate daily records, rather than to continue the present reliance upon the human factor, quite apart from the value of the figures of daily steam and air consumption. For example, metering would undoubtedly prove how closely related to changing weather conditions was the control of steam and/or heated air, and how frequently needless usage occurred. The greatest economy usually proves to be the sum of minor economies effected from day to day, and, even if the economy effected is apparently small, its cumulative value corresponds to an extremely satisfactory dividend on the small investment made.

New Improved Vacuum Filters

The Improved Paper Machinery Corporation, of Nashua, N. H., has just issued a new illustrated bulletin describing the IMPCO Vacuum Filters.

These filters, operating as save-alls, provide outstandingly high recovery of white water solids and include numerous features which make for better paper and more uniform product. Copies of this bulletin may be obtained upon application.

Simonds Worden White Co. Joins TAPPI

The Simonds Worden White Company of Dayton, Ohio, has become a member of the Technical Association of the Pulp and Paper Industry.

The parent company was the A. A. Simonds Company which was established in Dayton in 1873. The firm name became A. A. Simonds & Son Company and later the Simonds-Dayton Company. The present Simonds, Worden, White Company developed from a merger of R. J. Dowd Knife Works, Beloit Wisconsin, (established 1857); The Worden Tool Company, Cleveland, Ohio (established 1884), and the L & I. J. White Company, Buffalo, N. Y. (established 1838).

The four above plants have been continuously and successfully engaged in the manufacture of all types of machine knives, including woodworking machine knives, metal cutting machine knives, paper trimming machine knives wood chipper machine knives, barker machine knives, tobacco machine knives, etc.

In addition to the machine knives above the Dayton, Ohio and the Beloit, Wisconsin plants are engaged in the manufacture of paper mill engine beater bars, beater bed plates, etc.

The qualities of the paper trimming knives, chipper knives, beater bars, bed plates, etc., are recognized standard equipment with the trade. Years of experience and close contact with the consumers of their product have served to develop and improve qualities and designs of our various items of manufacture.

The Simonds-Dayton Division developed diamond pattern bed plates, corrugated pattern bed plates, corrugated pattern beater bars, vented style beater bars, all of which have become well established types and qualities for the paper manufacturing industry. The Dowd Knife Works Division developed our staggered styles beater bars, which type of bar has found wide application and use.

The paper trimming knives, wood chipper knives, and other paper mill types of knives have long been known and recognized for their standard of quality.

In addition to our machine knife line our parent division, Simonds-Dayton Company, manufacture at Dayton, Ohio, a full line of grinding wheels, marketed as Dayton grinding wheels.

The present officer personnel of the corporation is as follows: H. R. Simonds, president, treasurer and general manager, Dayton, Ohio; F. R. Henry, vice president, secretary and sales manager, Dayton, Ohio; W. S. Walls, vice president and manager of the L. & I. J. White Company Division, Buffalo, N. Y.; W. E. Bonesteel, chairman of the board and manager of The Worden Tool Company Division, Cleveland, Ohio; B. H. Meyer, manager of R. J. Dowd Knife Works Division, Beloit, Wis.

The company has on its staff sales and service men who are interested in and alive to the problems and progress in the paper manufacturing fields and the management is interested in and sincerely appreciates the activities and work of the Technical Association of the Pulp and Paper Industry.

The Simonds, Worden, White Company will be represented in the Technical Association by F. R. Henry.

Technical Section Index

The index to the Technical Section of the Paper Trade Journal is now available to members of TAPPI on request and without charge.

This index covers the period January to June, 1934 and Vol. 98 of the PAPER TRADE JOURNAL.

Alkaline Bleach Demand Test for Sulphite*

By Hans John[1] and Fred W. Poppe[1]

Abstract

A method is described for determination of the "bleach demand" of sulphite pulps. It is suitable for mill, laboratory, or research purposes; simple to perform; gives accurate results; and completely eliminates the human element in grading, judging pulp colors, or solution end-points.

A survey of the technical literature during the past twenty years, on the subject of pulp bleachability testing, indicates that considerable attention has been paid to this matter. Forty or more methods have been devised for measuring this quality, the methods falling under the subject headings of oxidation, acetylation, direct and indirect lignin determination, direct bleaching and colorimetric methods.

The merit of any given test is judged on the basis of what is considered desirable by those who employ it in actual practice. Naturally, on such a basis, differences of opinion arise, with the result that, the methods described show a wide variation in essential testing details. Thus, some require 24 hours for completion, while for others ten minutes is sufficient; some are adaptable to mill control, others only for research or laboratory use.

In the past twenty years we have tried all of the methods and modifications proposed in the literature; but all were difficult to check between mills and between different operators.

The procedure described in this paper is a modification and outgrowth of an idea presented by Hans John in 1926 and 1927. It has been found that, if unbleached sulphite fibers are uniformly suspended in a dilute hypochlorite solution, saturated with respect to calcium hydroxide, that the reactions deviate from those of ordinary bleaching as follows:

a. The amount of hypochlorite consumed is proportional to the lignin content of the pulp.

b. The straw colored reaction products are largely insoluble and stable in the alkaline medium and remain attached to the fibers, affording a measure of protection against attack of the cellulose. The action of the alkaline hypochlorite toward cellulose is also very mild, and as a result no degradation products are formed.

c. The reaction rate is rapid at the start of the treatment. When depletion of the lignin and other incrusting materials is approached the rate slows down so as to be imperceptible, even though relatively large amounts of hypochlorite are present. For this reason the bleaching tests may be carried out in the presence of excess hypochlorite, and it is not necessary to estimate the requirement of the pulp before the test is started. A second and more important result is that the test may be carried out on a time schedule thus eliminating the necessity of judging the end-point by color matching.

Advantage is taken of these factors in the "Alkaline Bleach Demand" test here described. Results of tests run on duplicate samples of pulp by different operators, in different mills, show remarkably close correspondence.

The method is simple and may be carried out by the workmen in the mill. It provides a definite reproducible index of pulp quality which may easily be converted to terms of actual bleach consumption in the mill bleachery. The following outline describes the test as it is used for sulphite pulps:

* Received March 18, 1934.
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Apparatus

A certain flexibility is allowable in the special apparatus required so long as it meets the important test conditions described later under Procedure. The equipment here outlined works satisfactorily for all general purposes.

1. A constant-temperature water bath, inside dimensions approximately 13½ inches long, 10½ inches wide and 6 inches deep, capable of maintaining a temperature between 34 and 36 deg. C. Fit bath with a false bottom made of a piece of heavy wire screening adapted to hold the sample beakers immersed to the proper depth.
2. One carboy, 40-50 liter capacity, for making and storing saturated lime water, equipped so that clear, satuated lime water can be withdrawn.
3. Buechner funnel, 4 inches diameter, with filter paper to fit.
4. Two suction flasks, 500-cc. and 2000-cc.
5. Trip scale or equivalent accurate to 0.1 gram.
6. Means of pressing wet pulp, if hand pressure is not adopted.
7. Pulp disintegrator, either portable mixer, churn or Forest Products dry disc type disintegrator.
8. Triple beam balance accurate to 0.01 gram. Pan to be housed in and heated to 105 deg. C. to avoid moisture pick-up during the final weighing.

Reagents

A. Standard arsenious acid (141N.) Used for determination of available chlorine.

B. Saturated calcium hydroxide solution. (Used for dilution of strong mill bleach liquors.) Add 1 to 2 Kg. of fresh high-calcium lime to the large carboy, fill with water, agitate, and allow the excess lime to settle out. Replace the water as required, agitate and allow to settle before use.

C. Alkaline bleach solution—Test a sample of regular strong bleach liquor for available chlorine. Prepare a stock solution of alkaline bleach by dilution of the strong liquor with saturated lime water to give a final strength of from 4.9 to 5.1 grams of available Cl. per liter. Keep in a dark, cool place and adjust the solution strength when required. It is recommended that an excess layer of high calcium lime be maintained in the bottom of the stock bottle to insure stability of the bleach, and that a siphon be used to allow withdrawal of the clear bleach liquor for use.

D. Sulphuric Acid—Provide a supply of dilute sulphuric acid (approximately N/5) for use in the washing of the bleached pulp. Just before use dilute approximately 50 cc. of the acid to 250 cc. with water.

Test Specimen

If the pulp is in wet lap form, place 50-60 grams (air-dry) in a 1-gallon churn, add water and agitate for 3 minutes. If the pulp is in dry form, soak in lukewarm water for 15 minutes, and run through a clothes wringer under pressure three times, tipping the pulp in water before each pass. Then repulp in the churn.

Standard Pulp Charge

If a very high degree of accuracy is required, it is necessary to make a moisture test of the stock in order to get exactly the proper amount of pulp for the test. This is not necessary in ordinary mill control work. Adoption of a standard method of pressing the pulp gives consistence

uniform enough so that the operator can weigh out a standard wet weight for test. Sufficient wet pulp should be taken so that the oven-dry weight of the bleached pulp will be not less than 4.8 nor more than 5.1 grams.

Procedure

Break up the weighed sample into small bits. Place in a clean dry 250-cc. beaker and cover with a watch glass. Pipette 150 cc. of the standard alkaline bleach solution into the beaker containing the sample, and stir with a glass rod for 3 minutes to insure thorough mixing. Place the sample in the water bath, which has been previously adjusted to 34-36 deg. C., and record the time. Cover the sample with a watch glass and leave the stirring rod in the beaker during the bleaching. Stir the mixture at intervals of 10 minutes during the first half hour, and then every half hour. At the end of 3½ hours remove the beaker from the bath and wipe the outside dry. Tease the condensate from the watch glass into the beaker. Filter through a dry filter paper and Buechner funnel, into a dry 500-cc. suction flask. Set aside this first filtrate for titration of the residual Cl. content.

Transfer the funnel to a larger filter flask and wash the pulp with three 250-cc. portions of clean water. Release the vacuum before each addition of wash water and stir the pulp on the filter to aid in the washing. Wash once with another 250-cc. portion of wash water containing 50 cc. of the dil. H_2SO_4 (approximate N/5), and then follow with three final water washes. Examine the wash water and discard it if it is free from fiber. If it contains an appreciable amount of fiber, re-filter it through the pulp pad.

Remove the pad from the funnel and strip off the filter paper, taking care to retain all of the pulp. Dry to constant weight at 100-105 deg. C. and weigh to the nearest 0.01 gram on the triple beam balance.

Titrate duplicate 25-cc. samples of the first filtrate with 0.141 N arsenious acid to determine the concentration of available Cl. in the residual liquor.

Calculations and Report

"Bleach demand" is reported in terms of grams of Cl. consumed per 100 grams of oven-dry bleached pulp.

Let B = bleach demand
W_1 = wet weight in grams, unbleached pulp, start of test
W_2 = weight in grams, bone dry pulp, end of test
S = strength of original bleach solution in grams of available Cl. per liter
C = strength of residual bleach solution in grams of available Cl. per liter

Then:

$$B = \frac{100}{W_2}\left[0.150S - C\,\frac{150 + W_1 - W_2}{1000}\right]$$

Illustration: Suppose $W_1 = 20$ grams
$W_2 = 5$ "
$S = 4.91$ "
and $C = 3.07$ " then substituting values

$$B = \frac{100}{5}\left[0.15 \times 4.91 - 3.07\,\frac{150 + 20 - 5}{1000}\right]$$
$$= 4.60$$

Notes:
1. When several samples are run at one time, care must be taken to see that the temperature is uniform and correct throughout the bath.
2. Keep a supply of clear saturated lime water available for dilution of the strong bleach solution. It is well to discard the contents of the lime-water carboy every 3 months, and to make up a new batch to make sure that the solution remains saturated. Sufficient lime should be present so that the solution saved for the back titration remains distinctly alkaline to phenolphthalein.

Modifications for Mill Control Testing

Modifications of some of the details of the test are desirable when the tests are to be run by the operating crew in the mill. Recommended changes follow:

1. Double the amounts of the following items to minimize errors in weighing and measuring.
   a. Pulp charge
   b. Bleach charge
   c. Sample of recovered solution used for the back titration
   d. Wash waters
2. Use enameled cups instead of beakers, and slotted copper discs instead of watch glasses.
3. Provide means for gentle mechanical agitation of the pulp during the bleaching.
4. The mill laboratory may furnish the solutions required, together with tests and conversion tables for calculations. (See Tables I and II).
5. The final calculations are simplified if the operators are taught to press the original pulp sample to a dry pulp content of about 20 per cent. Use of 50 grams of the wet pulp then gives a final sample weight of ten grams and the equation becomes:

$$B = \frac{100}{W_2}\left[0.300S - C\,\frac{300 + 50 - 10}{1000}\right]$$

Some small errors are introduced by this simplification; but they are so small that they are of no importance for control work.

6. A table similar to the condensed Table II may be used for the calculation of the residual available Cl.

TABLE I

Grams Chlorine Used at Start with 300 cc. of Bleach Solution

Strength Grams Per Liter	Chlorine Added Grams	Strength Grams Per Liter	Chlorine Added Grams	Strength Grams Per Liter	Chlorine Added Grams	Strength Grams Per Liter	Chlorine Added Grams
4.80	1.440	4.90	1.470	5.00	1.500	5.10	1.530
4.81	1.443	4.91	1.473	5.01	1.503	5.11	1.533
4.82	1.446	4.92	1.476	5.02	1.506	5.12	1.536
4.83	1.449	4.93	1.479	5.03	1.509	5.13	1.539
4.84	1.452	4.94	1.482	5.04	1.512	5.14	1.542
4.85	1.455	4.95	1.485	5.05	1.515	5.15	1.545
4.86	1.458	4.96	1.488	5.06	1.518	5.16	1.548
4.87	1.461	4.97	1.491	5.07	1.521	5.17	1.551
4.88	1.464	4.98	1.494	5.08	1.524	5.18	1.554
4.89	1.467	4.99	1.497	5.09	1.527	5.19	1.557

TABLE II

Grams Available Cl. in Residual Liquor Corresponding to Titration of 50-cc. Sample.

0.141 N Arsenite Used, cc.	Corresponding Available Chlorine, Grams	0.141 N Arsenite Used, cc.	Corresponding Available Chlorine, Grams
1.0	0.034	7.0	0.238
2.0	0.068	8.0	0.272
3.0	0.102	9.0	0.306
4.0	0.136	10.0	0.340
5.0	0.170	20.0	0.680
6.0	0.204	30.0	1.020
		40.0	1.360

The final calculation of results is then carried out as follows:

(a) Find the grams of available Cl. at the start from Table I.

(b) Find the grams of available Cl at the end of the bleaching from Table II.

Subtract (b) from (a) to find the grams of Cl. consumed; multiply the difference by 100, and divide by the exact bone-dry weight of the bleached pulp. The result is the per cent of Cl. consumed under the conditions of the test and this has been termed by us the "alkaline bleach demand" test to distinguish it from the methods formerly used.

Pulp and Paper Industry Literature Review

Abstracts of Articles and Patents Compiled by the Abstracts and Bibliography Committee of the Technical Association of the Pulp and Paper Industry, A. Papineau-Couture, John F. Ohlson, C. E. Peterson and Clarence J. West, Chairman

Copies of United States Patents can be obtained from the United States Patent Office, Washington, D. C., for 10 cents each. Send currency, not stamps.

Machinery

The Vacuum-Forming Paper Machine. Its present Field and Possible Future Applications. A. N. Russell. World's Paper Trade Rev. 101: 586-594, 632-638 (Feb. 23, 1934).—A general description of the machine, with a discussion of its practical application to the making of certain grades of paper.—A. P.-C.

Automatic Paper Machine Regulator. Brown Boveri and Co., and Henri J. F. Breton. Fr. pat. 755,231.—The weight of the sheet on the paper machine is maintained constant by passing the sheet over a roll forming part of a special balance device designed and constructed so that it is influenced only by the weight and not by the pressure and tension of the sheet. Variations in the weight of the sheet are transmitted to the balance, which acts on the speed regulator of the machine drive, altering the speed of the machine so as to restore the weight to the original predetermined value.—A. P.-C.

Improvement to Paper Machines. Samuel Milne. Fr. pat. 756,809 (June 12, 1933).—In Yankee machines, numerous air blasts are directed against the surface of the sheet as it is passing over the drier cylinder, in such a manner as to displace the film of water vapor which has a tendency to adhere to the sheet.—A. P.-C.

Abnormal Wear of Fourdrinier Wires Over the Suction Boxes. V. Bouyer. Papier 37: 75-81 (Jan., 1934).—An explanation of the detection of the grooving of suction-box covers by the wire and of remedies which can be used effectively to overcome this defect.—A. P.-C.

Suction-Box Cover. Rohrbacher Lederfabrik Jos. Peeschl's Sohne A. G. Fr. pat. 754,522.—Those portions of the suction-box cover that come into contact with the fourdrinier wire are made of or covered with leather.—A. P.-C.

Some Economical Modifications of Old Fourdrinier Machines. Walter C. Warrell. World's Paper Trade Rev. 100: 1538-1546; 1626, 1664-1669 (Nov. 17, 24, 1933); Paper Maker & Brit. Paper Trade J. 87: TS 39-43 (Jan. 1, 1934).—A general discussion.—A. P.-C.

The Manufacture of Woolen Felts. J. Evans. World's Paper Trade Rev. 100: 1990-1994 (Dec. 22, 1933).—A brief description of the manufacture of woollen paper-making felts.—A. P.-C.

The Paper Machine Press. F. L. Barstow. Paper Mill 56, No. 44: 10-11 (Nov. 4, 1933).—A brief discussion of crowning and of rubber densities for rubber-covered press rolls.—A. P.-C.

Some Possible Developments in Machine Design for Low Sulphite News Furnishes At High Speeds. E. M. Little. Pulp Paper Can. 35: 110 (Conv. Issue, 1934).—A brief discussion emphasizing the importance of improving wire drainage conditions.—A. P.-C.

Production of Marbled and Decorated Papers. M. J. M. Mougeot. Fr. pat. 758,709 (July 12, 1933).—The invention provides that a suitable rotating distributor, the position and speed of which are adjustable, is interposed between the feed of mottling or decorative fibers and the surface from which it flows on to the sheet of paper on the wire.—A. P.-C.

A Revolutionary De-Inking Process. Alex Annandale. World's Paper Trade Rev. 100: 1077-1078 (Oct. 6, 1933).—The process consists in pulping the waste papers in a breaker beater in presence of a mixture of chemicals (the nature of which is not disclosed) and washing in a specially designed washer, the whole operation requiring less than 1 hour. Its advantages are briefly indicated.—A. P.-C.

Blow Pit and Method of Operating the Same. Hobert W. French assignor to Hammermill Paper Co. U. S. pat. 1,947,707 (Feb. 20, 1934).—The blow pit, which is preferably elliptical in shape, is provided with a sump at one end which is connected to the suction side of the pump. The pressure side of the latter is connected to a conduit which follows the interior wall of the pit, substantially completely around the pit, at a point just above the false bottom, and provided with an opening at its inner edge just above the false bottom and extending the whole length of the conduit.—A. P.-C.

Paper Rewinder. Earl E. Berry assignor to Beloit Iron Works. U. S. pat. 1,939,198 (Dec. 12, 1933).—The invention provides for an ejector to remove rolls wound to the desired diameter, irrespective of whether they are of large or small diameter. With small diameter rolls the device acts on the ends of the shaft, while with large rolls the ejecting force is uniformly distributed along the whole length of the roll. An empty core is automatically placed in position after the wound roll has been ejected.—A. P.-C.

Web Tensioning Means. Charles A. Dickhaut assignor to John Waldron Corp. U. S. pat. 1,952,913 (March 27, 1934).—A counterweighted floating roll is supported on a web passing from an unwinding to a winding roll and is suitably connected to a lever which controls braking means acting on the winding shaft.—A. P.-C.

Embossing Attachment for Paper Machines. Austin E. Cofrin. U. S. pat. 1,946,838 (Feb. 13, 1934).—The invention provides means for attaching to existing machines for paper towelling embossing rolls which may be separated to permit of threading the paper between them. The two rolls are positively driven at the same speed as the paper machine, even when they are separated, so as to ensure of their meshing properly when they are brought together again.—A. P.-C.

Process for Treating Paper. Leon M. Yoerg assignor to American Writing Paper Co. U. S. pat. 1,948,874 (Feb. 27, 1934).—Tub-sized paper, on leaving the size tub, is sprayed with a hardening solution, *e.g.*, formalin, and is then immediately dried before the hardening solution has had time to penetrate into the body of the paper. This yields a sheet that has hardened, waterproof surfaces, but which remains readily pliable.—A. P.-C.

Sheet Winding Machine. George E. Gibbs assignor to American Reenforced Paper Co. U. S. pat. 1,942,357 (Jan. 2, 1934).—The invention covers various mechanical features in the construction of a machine for winding paper into rolls of predetermined length. It provides mechanism for moving an empty arbor into the winding position

and for holding it against the web while it is being moved into winding position, so as to hold the paper stretched after it is cut from the finished roll and is being placed around the empty arbor. A knife guiding bar is mounted so that it is automatically positioned at the point where it is desired to cut the sheet. Means are provided for raising one of the winding rolls out of winding position to facilitate removal of a completed roll.—A. P.-C.

Paper Sorting Machine. Louis L. Matthews assignor to Charles B. Maxson and Julian W. Maxson. U. S. pat. 1,942,870 (Jan. 9, 1934).—In a machine for cutting, piling and counting paper sheets, there is provided a switch which is normally kept out of the path of the sheets between the cutter and lay boy. Manually-operated means are provided for bringing the switch into the path of the paper when defective sheets are observed, so as to divert them away from the lay boy, and at the same time the counting mechanism is stopped until such time as perfect sheets are again delivered to the lay boy.—A. P.-C.

Riding Roll for Paper Machine Winders. Bernard A. Malkin and Frank McHenry. U. S. pat. 1,946,801 (Feb. 13, 1934).—The riding roll is mounted on a shaft journalled in the free ends of a pair of swinging arms. The opposite ends of the arms are pivotally supported on a shaft located at one side of and parallel to the core shaft on which the paper is wound. As the paper roll builds up in diameter, the riding roll moves upwardly and outwardly along a curved path, resulting in a gradual transfer of the weight of the riding roll from the paper to the shaft about which the swinging arms are pivoted. Means are provided for swinging the riding roll entirely clear of the paper when required, *e. g.*, when removing a finished roll.—A. P.-C.

Suction Box. Carl H. R. Johnson and Homer H. Latimer. U. S. pat. 1,940,594 (Dec. 19, 1933).—The wire, as it passes over the suction box, is supported on a series of parallel V-belts which travel at the same speed as the wire. The belts are trained around two grooved rolls mounted inside the suction box, and their upper runs are supported on a vertically adjustable perforated plate to prevent them from sagging.—A. P.-C.

Shaking Mechanism for Fourdrinier Machines. Frank M. Sanger assignor to The Bagley & Sewall Co. U. S. pat. 1,946,592 (Feb. 13, 1934).—The shaking or vibrating movement is produced by a weighted rotating member or members, the pulling weight of which is supported off center, so that an unbalanced condition is produced. By using two opposed weighted rotating members, any vertical vibratory movement of the shake is substantially eliminated.—A. P.-C.

Method of Handling the Trim from the Paper Machine Wire. Hector McVicker and Edwin F. Bearce assignors to The Chillicothe Paper Co. U. S. pat. 1,945,118 (Jan. 30, 1934).—The trim stock, instead of being squirted into the couch pit, is collected separately, mixed with white water, and returned directly to the main supply of stock to the machine.—A. P.-C.

Paper Machine Slice. Benjamin E. Teale. U. S. pat. 1,936,609 (Nov. 28, 1933).—The invention provides a unitary structure of a slice that can be readily attached to or removed from a fourdrinier machine. The construction permits of adjusting or deforming the lower edge to conform to irregularities across the width of the wire.—A. P.-C.

Oscillating Suction Box. William P. Muir assignor to Dominion Engineering Works. U. S. pat. 1,937,478 (Nov. 28, 1933).—The salient feature of the invention resides in moving each end of the individual boxes in a continuous or circular path about a fixed axis, the arrangement being characterized in that each end of the box has an undirectional movement about its own axis, which is preferably opposite to the undirectional movement of the other end of the box, so that the box as a whole is moved back and forth across the wire at a continuously changing angle.—A. P.-C.

Fourdrinier Paper Machine. John P. Pederson. U. S. pat. 1,937,125 (Nov. 28, 1933).—The machine is constructed so that all the working parts of the fourdrinier remain in their normal positions during removal and replacement of the wire. This is accomplished by providing a movable support for the frame and working parts, which support can move sideways of the machine while at the same time continuing to support the frame, etc., so that the wire can be moved sideways of the machine without displacing the latter.—A. P.-C.

Press Roll. John W. Vedder assignor to Rice, Barton and Fales, Inc. U. S. pat. 1,938,444 (Dec. 5, 1933).—The lower press roll is made of a yielding material (*e.g.*, rubber) and is provided with interstices (indentations or grooves) which are pressed together by the pressure of the rolls at the bite and receive moisture in them when they are expanded as the surface of the lower roll moves away from the upper roll; at the same time they take up additional moisture and do not return it to the felt.—A. P.-C.

Cylinder Board Machine. Cliff R. Crawford assignor to The Black-Clawson Co. U. S. pat. 1,913,660 (June 13, 1933).—In a single-cylinder board machine, a screen-covered press roll is provided to compact the sheet just after it emerges from the stock in the vat. A smoothing rubber-covered press roll is provided vertically above the axis of the cylinder mold, so that the moist board web leaves the cylinder tangentially in a subtantially horizontal direction, and travels in a straight line to and through a series of presses. The screen-covered roll is positively driven at the same peripheral speed as the cylinder mold.—A. P.-C.

Apparatus for Forming Fiber Sheets. Henry W. Piquet assignor to MacAndrews and Forbes Co. U. S. pat. 1,939,518 (Dec. 12, 1933).—In a one-cylinder board machine an auxiliary endless wire carried by "idling" rolls presses the sheet against the cylinder as it emerges from the stock in the vat. The lower "idling" roll is positioned entirely below the surface of the stock. The roll is of open construction, and a spray is provided to prevent accumulation of stock thereon.—A. P.-C.

Trimming Paper Made on Cylinder Machines. Daniel A. Smith assignor to The District of Columbia Paper Manufacturing Co. U. S. pat. 1,949,188 (Feb. 27, 1934).—The sheet is formed the full width of the cylinder molds, irrespective of the width desired for the finished sheet. As the wet sheet is reversed after leaving the last cylinder, it is cut to the desired width by means of two fine jets of water, and the trim is picked off the felt by means of two baby couching rolls, from which it is removed by means of doctors and is returned to the pulp supply of such of the vats as may be advisable. The trimming nozzle and baby couching rolls are adjustable across the width of the machine while the latter is in operation.—A. P.-C.

Plant and Apparatus for Making Paper. James K. Darby assignor to William H. Millspaugh. U. S. pat. 1,939,337 (Dec. 13, 1933).—The invention provides numerous features in the layout and design of fourdrinier machines, some of which are: providing an alcove back of the fourdrinier to permit of changing wires and reducing the width of the aisle on the front side of the machine; means for supporting the full width of the wire incidental to placing it on the machine, and for replacing the wire without telescoping any part of the machine structure; supporting the paper from edge to edge for thread-

ing through the driers; threading from the driers to the calenders at the normal operating speed; means associated with the calenders for giving light weight, low grade papers a relatively high finish at lower cost, and for giving a relatively high finish to high grade paper without reducing the thickness of the paper.—A. P.-C.

Method for Regulating Paper Machines to the Same Basis Weight. Hans Krenn, Steyrermuhl. Ger. pat. 592,476 (Dec. 31, 1931).—The regulation is actuated by the change in vacuum at the suction boxes.—J. F. O.

Device for Holding Constant the Concentration, That Is, the Viscosity of a Flowing Medium, Such As, for Example, a Suspension of Paper Stock. R. Carlstedt, Stockholm. Swed. pat. 79,139 (Dec. 3, 1929).—A pressure change in the pump line, due to the change in viscosity actuates the device.—J. F. O.

Device for the Continuous Heat Treatment of Materials By Means of Air or Other Gases in a Revolving Drum. J. Pehrson and A. Pehrson, Norras. Swed. pat. 79,265 (Oct. 4, 1929).—The drum is provided with longitudinal canals which cover the outside and have openings through which the gases pass into the drum.—J. F. O.

Regulating the Thickness of Paper on the Machine. Clayton D. De Mers and Raymond E. Olson assignors to Taylor Instrument Co. U. S. pat. 1,936,049 (Nov. 21, 1933).—The thickness of paper on the machine is controlled by regulating the flow of pulp into the wire in response to a change in the speed of the machine and (or) the pressure of the pulp supplied thereto.—A. P.-C.

Doctor for Paper Making Machinery. Frederick W. Vickery assignor to Vickery Inc. U. S. pat. 1,945,761 (Feb. 6, 1934).—The doctor comprises a blade and a carrier therefor. The blade is curved in cross section so that at the edge bearing upon the roll it stands at a larger angle to the tangent plane to the roll at the line of contact than does the part secured to the carrier.—A. P.-C.

Method of Making Paper. William E. Bair, Jr., assignor to The Mead Corp. Brit. pat. 396,063 (July 26, 1933).—After placement of paper-forming stock onto a forming wire, additional paper-forming material is subsequently applied to the wire side of the forming web while the web is still on the forming wire, in order to avoid two-sidedness.—A. P.-C.

Dandy Roll Construction. John A. Spencer. U. S. pat. 1,933,154 (Oct. 31, 1933).—The roll has a wire cloth covering supported by a helically-wound wire.—A. P.-C.

Fourdrinier Wire Seam. Edward J. Buell assignor to The Lindsay Wire Weaving Co. U. S. pat. 1,930,336 (Oct. 10, 1933).—The end weft wires are brought together and brazed along their entire length. The seam is reinforced with a lacing wire.—A. P.-C.

Suction Box Cover. Wilhelm Poeschl, Rudolf Poeschl and Wilhelm Roth assignors to Rohrbacher Lederfabrik Josef Poeschls Sohne A. G. U. S. pat. 1,938,637 (Dec. 12, 1933).—At least such portions of the cover as come into direct contact with the wire consist of leather.—A. P.-C.

Fourdrinier Wire Seam. Albert B. Weissenborn and William E. Buchanan assignors to Appleton Wire Works, Inc. U. S. pat. 1,949,593 (March 6, 1934).—The end weft wire is removed from each of the parts to be joined, the warp ends are joined by a soldered connection, and the removed weft wires are replaced by insert wires after joining the warp ends.—A. P.-C.

Paper Making Machine. William H. Millspaugh. U. S. pat. 1,930,104 (Oct. 10, 1933).—The sheet is picked off the wire by means of a press roll which rests directly on the wire and around which passes a press felt. A second press roll is mounted directly above the first-mentioned press roll.—A. P.-C.

Rubber-Surfaced Perforated Roll. Earl E. Berry assignor to Beloit Iron Works. U. S. pat. 1,947,636 (Feb. 20, 1934).—The metal shell is perforated in a multiple-spindle drilling machine and removed from the machine. The rubber covering is applied, the shell is replaced in the drilling machine and the rubber covering is drilled in correspondence with the holes in the shell by effecting the same indexing operations.—A. P.-C.

Smoothing Roll for Cylinder Paper Machine. Roy W. Maggart. U. S. pat. 1,944,093 (Jan. 16, 1934).—In a cylinder machine for making paper having both sides similar, between the first and second presses there is interposed a pair of rolls engaging the sheet directly (without interposition of any felt). One of the rolls has a "reticulated" surface to replace the felt marks produced at the first press by a "reticulated" pattern.—A. P.-C.

Suction Cylinder Mold for Paper Making Machines. Theodore L. Formaini. U. S. pat. 1,937,426 (Nov. 28, 1933).—The cylinder mold comprises an inner perforated shell carried by the cylinder heads, and an outer screen covering spaced at a suitable distance from the inner shell and supported by ribs which engage the inner shell between the perforations on the latter. The suction box engages the inner shell.—A. P.-C.

Paper Slitting Apparatus. Fred Schwartz assignor to Fort Howard Paper Co. U. S. pat. 1,939,925 (Dec. 19, 1933).—The support over which the web is passed as it is being slit is provided with grooves or slots into which the slitters project. The slots communicate with the hollow inside portion of the support, which is connected to a source of vacuum. This acts to spread the paper as it moves past the slitter, to prevent it from creeping up the back of the slitter after being cut, and to remove dust and fine fibers resulting from the slitting operation.—A.P.-C.

Apparatus for Bending or Creasing Cardboard, Fiberboard, Etc. John I. Nasmith assignor to Vickers-Armstrong, Ltd. U. S. pat. 1,941,484 (Jan. 2, 1934).—In a machine for forming more than 2 bends or creases simultaneously in cardboard, etc., means are provided for imparting to the board a curvilinear form without compressing it, and before it is fed to the bending or creasing tools.—A. P.-C.

Pulp Screen. Thomas O'Connor. U. S. pat. 1,937,526 (Dec. 5, 1933).—A rotary screen is mounted in a tank, and an agitator comprising a number of spaced bars is supported between the screen and the wall of the tank in such a way that it may be moved alternately toward and away from the screen.—A. P.-C.

Screen Plate. Alfred D. Hoyle and Frederick B. Olson assignors to Brown Co. U. S. pat. 1,937,274 (Nov. 28, 1933).—A screen plate is constructed by assembling side by side a number of hard, non-corroding, steel bars having a T-shaped cross section, with uniform spacing elements near their ends, and welding the bars rigidly together at their ends.—A. P.-C.

Modern Practice in Screening Pulp. L. E. Kendall. Pulp Paper Can. 35: 111-116 (Conv. Issue, 1934).—A review of present groundwood-screening layouts and of the variables affecting groundwood-screening, showing the necessity for close control of each, and indicating further lines of investigation to develop the technic of screening and the fundamental means of comparing various screening units.—A. P.-C.

Pulp Screen. Marcel Lamort assignor to Etablissements E & M Lamort Fils. U. S. pat. 1,945,492 (Jan. 30, 1934).—The screening drum is constructed of flat screening plates which are mounted in star-shape about a central shaft, thus affording an angular or corrugated surface at the periphery.—A. P.-C.

Flat Screen. Orrie J. Mills and William G. Webb. U. S. pat. 1,942,303 (Jan. 2, 1934).—Each diaphragm beneath the screen surface slopes sideways towards a flow box extending longitudinally of the screen, and the chamber between the screen and diaphragm communicates directly with the flow box. The outlet from this chamber into the flow box is provided with a gate for varying its effective size, thus permitting of regulating the degree of vacuum and pressure exerted under the screen. Means are provided for cleaning any number of the screen plates by introducing cleaning fluid underneath them, without stopping the screening operation and without removing the plates. The diaphragms and operating means therefor are substantially balanced, so as to reduce the power consumption.—A. P.-C.

Combined Tailings Refiner and Screen. John A. Wiener. U. S. pat. 1,939,747 (Dec. 19, 1933).—This is an improvement on Wiener's U. S. pats. 1,730,908 of Oct. 8, 1929, and 1,775,743 of Sept. 16, 1930. An ordinary jordan-type plug is used in conjunction with a shell having a plane, smooth inner surface, the wall of which is perforated to effect the continuous screening of the refined tailings by forcing the stock through the perforations. The plug is operated at exceedingly high speed (1500 to 3500 r.p.m.) to force the stock against the perforated shell wall by centrifugal force. At the larger end of the plug there is a detachable extension to the plug and shell, both of which are provided with blades to reduce the tailings which have passed through the main portion of the machine without being sufficiently reduced.—A. P.-C.

Treatment of Chemical Pulp. Raymond S. Hatch assignor to Weyerhaeuser Timber Co. U. S. pat. 1,951,017 (March 13, 1934).—The medullary rays, or other short fibers of similar length, are separated from the longer longitudinal fibers by flowing the pulp downwards over an inclined screen, the inclination and mesh of which are so correlated that the medullary rays and other short fibers pass through and the longer fibers pass over the screen.—A. P.-C.

A Device to Equalize the Pressure on Multiple Roll Lever or Hydraulic Calenders. Joh. Kleinewefers Sohne, Krefeld. Ger. pat. 589,024 (May 19, 1932).—J. F. O.

Process for the Manufacture of Suction Box Covers for Paper Machines and Similar Apparatus. Rohrbacher Lederfabrik A. G., Vienns. Aust. pat. 135,846 (July 15, 1933). Addition to Aust. pat. 133,780. The leather suction cover is fastened to the suction box by means of a water-proof cement consisting of a celluloid acetone mixture.—J. F. O.

Screw Press. Naamlooze Vennootschap Maatschappij, Arnhem, Netherlands. Nor. pat. 53,094 (Jan. 25, 1933).—J. F. O.

Arrangement for the Settling Out of Suspended Matter in Liquids, Especially Paper Stock, Pulp and Similar Materials. Maschinenfabrik zum Bruderhaus, Reutlingen. Ger. pat. 583,551 (Dec. 2, 1931).—J. F. O.

Centrifuge for De-Felting Paper and Pulp. Erkens Maschinnefabrik und Eisengiesserei, Duren. Ger. pat. 589,873 (July 25, 1929). The drum of the centrifuge is built in successive stages, the diameter increasing over the under section.—J. F. O.

Automatic Cutting Arrangement for Paper, Webstuffs, and Similar Materials. Allgemeine Elektricitats Gesellschaft, Berlin. Aust. pat. 134,527 (April 15, 1933).—The arrangement is actuated by a device sensitive to light.—J. F. O.

Inlet for Stock for Fourdrinier or Carton Machines. Firma J. M. Voith, St. Polten. Aust. pat. 134,537 (April 15, 1933).—J. F. O.

Arrangement for the Automatic and Continuous Preparation of a Determined Mixture of Stock of Different Consistencies. Arca Regler Akt. Ges., Berlin. Aust. pat. 134,852 (July 15, 1931). The regulation is dependent on the various liquor levels and the friction of the mixture as it leaves a container.—J. F. O.

Screen for a Device for the Forced Circulation of the Liquor from a Pulp Digester. Einar Morterud, Torderod, Norway. Czech. pat. 42,932. A screen in the shape of a truncated cone is placed in the lower part of the digester near the blow valve.—J. F. O.

Screen Plate for Pulp and Paper Stock. Aktiebolaget Nordiska Armatur, Stockholm. Czech. pat. 43,972.—J. F. O.

Paper Machine with a Circular Screen. Alois Purkert Paper und Pappenfabrik, A. G., Tepliz, Bohemia. Czech. pat. 44,765.—J. F. O.

Process for the Separation and Recovery of Fibers and Suspended Matter from the Waste Liquors and Fiber Suspensions in the Manufacture of Ground Wood, Pulp, Paper and Cartons as Well as the Related Industries, Where the Waste Water is Brought Into a Settling Tank in Which Air is Introduced So That the Suspended Matter is Carried to the Surface by Means of the Air Bubbles. Rudolf Steinmetz, Steyrermuhl. Czech. pat. 44,794.—J. F. O.

Screen for Pulp, Ground Wod and Similar Materials. A. Bol. Kamyr, Karlstad, Sweden. Nor. pat. 52,983 (Nov. 7, 1931).—J. F. O.

Rotating Filter Operating Under Vacuum or Pressure. F. L. Smidth & Co., Copenhagen. Nor. pat. 53,011 (March 17, 1932).—J. F. O.

Process and Arrangement for Re-Working of Paper Machine Broke. Fr. Grewin, Hallstavik, Sweden. Nor. pat. 53,006 (April 7, 1932).—J. F. O.

Apparatus for the Indirect Heating or Cooling of Cooking Liquors in the Cooking of Pulp. A. B. Karlstads Mek. Verkstad. Swed. pat. 78,806 (May 23, 1931). The apparatus consists of a container provided with inlet and outlet valves for liquors and having heat interchange elements.—J. F. O.

Process for the Preparation of Pure Warm Water of High Temperature by the use of the Contaminated Secondary Steam Formed During the Cooking of Pulp. C. Rosenblad, Stockholm. Swed. pat. 78,735 (Jan. 27, 1930). The steam is mixed with a cooling liquid in a mix or jet condensator.—J. F. O.

Automatic Vacuum Filter for Aqueous Suspensions of Pulp, Ground Wood and Similar Materials. A. Mylius, Oslo. Swed. pat. 78,737 (April 30, 1932).—J. F. O.

Device for Conducting Liquids Containing Stock, Such as Pulp and Water. Aktiebolaget Ekstroms Maskinaffar, Stockholm. Ger. pat. 590,837 (Aug. 31, 1932).—J. F. O.

Chipper. J. O. Marland, Karlstad, Sweden. Ger. pat. 590,887 (July 6, 1932).—J. F. O.

Process and Arrangement for the Re-Working of Paper, Carton, Pulp and Similar Materials. F. Grewin, Hallstavik, Sweden. Ger. pat. 591,145 (Oct. 16, 1931).—J. F. O.

Device for the De-Fibering and Cleaning of Pulp. F. Gobl and Sixten Hjelte. Ger. pat. 591,658 (Dec. 9, 1930).—J. F. O.

Process and Arrangement for the Heating of Calender Rolls and Other Long Hollow Bodies. Walter Osthoff, Wuppertal. Ger. pat. 591,118 (March 5, 1931).—J. F. O.

Device for Board Machines for Producing Thicker Boards and Building Plates. Bruno Muller, Herischdorf. Ger. pat. 590,531 (Jan. 29, 1933).—J. F. O.

Guide Roll with Stationary, Inter-Changable Bearing. Rudolf Krakora, Gratkorn. Aust. pat. 135,248 (June 15, 1933).—J. F. O.

Arrangement for Pressing Out Wet Webs. Firma Aruthur Schutz, Vienna. Aust. pat. 135,558 (July 15, 1933); addition to Aust. pat. 132,595.—J. F. O.

Mill for the After-Treatment of Broke and for the Diminuting of Ground Wood and Pulp and Similar Materials. Maschinenbau Werkstatte Niefern G.m.b.H., Baden. Ger. pat. 592,523 (May 28, 1930).—J. F. O.

Device for the Regulation of the Speed of One or More Electric Motors in Relation to the Master Motor by Means of One or More Asynchronous Alternating Current Machines. Allmanna Svenska A. Bol. Vasteras. Swed. pat. 78,773 (Feb. 7, 1930).—J. F. O.

Device for the Electrical Measurement of Flowing Liquids, Such as the Water from Press Rolls. E. Nordhagen and A. Jacobsen, Hokksund. Nor. pat. 53,061 (Oct. 1, 1930).—J. F. O.

Arrangement on Paper Machines with Electrical Multiple Motor Drive for Setting the Draw in the Sheet. Aktiengesellschaft Brown, Boveri & Cie, Baden, Switzerland. Ger. pat. 591,441 (Nov. 25, 1930).—J. F. O.

Device for the Drive of Paper and Similar Machines. Karl Schonemann, Heideinheim. Ger. pat. 592,125 (Jan. 20, 1931).—J. F. O.

Regulating Device for Direct Current Motors, Especially for Multiple Motor Drives for Paper Machines. Siemens Schuckertwerke, Berlin. Ger. pat. 592,222 (Aug. 13, 1930).—J. F. O.

Combination, Changeable Drive Device for Paper and Similar Machines. F. Chorton and C. Walmsley & Co., Bury. Swed. pat. 78,935 (March 7, 1929).—J.F.O.

Modern Electric Drive and Equipment for a Wood Pulp Factory. W. Kuhl. Siemens Z. 14:58-62 (1934).—Ten illustrations. A detailed account emphasizing the advantages of electrified equipment.—C.J.W.

Acid-Resistant Brick Linings. L. Koegel. Chem. Fabrik 7, no. 9/10:77-82 (Mar. 7, 1934).—A general discussion of the present status of acid-resistant brick linings is presented, including a description of the required properties of the material (bricks and cement), as well as the correct method for preparing the surfaces of the containers to be lined and for applying the lining, the further treatment of the lining and different applications.—C.J.W.

Revolving Cross Cutters. Pappers-Trüvarutid Finland 15, no. 3:112, 114-116, 118 (Feb. 15, 1934).—Novel features of cutter manufactured by the firm O. C. Strecker of Darmstadt, Germany, are described.—C.J.W.

1933 Developments in Electrical Equipment for Paper Mills. H. W. Rogers. Paper Trade J. 98, No. 10:28, 30, 33 (March 8, 1934).—A brief description of the most promising developments: (1) electrical aid to the mechanically-driven cylinder machine, (2) adjustable voltage winder drive with constant tension control, (3) synchronous wood chipper drive, (4) thrustor-operated paper cutter control.—A.P.-C.

Pumping Heavy Stock. Parkman A. Collins. Paper Mill 56, No. 41:9-12 (Oct. 14, 1933).—A general discussion of the design and performance of pumps for high-density stock.—A.P.-C.

Reduction of Corrosion and Wear by the Use of Laminated Resinous Machine Parts. G. E. Landt. Paper Trade J. 98, No. 7:38-40 (Feb. 15, 1934).—A discussion of the contribution which resinous machine parts make in securing continuous and uniform operation in the paper mill.—A.P.-C.

Observations on the Working of Anti-Friction Bearings in Paper Mills. J. T. Sayers. World's Paper Trade Rev. 100:1705-1708, 1746-1752 (Dec. 1, 1933).—A discussion of experience gained in paper mills using this type of bearing during the past few years, and of the conclusions, both practical and theoretical, which can be drawn from such information.—A.P.-C.

A. C. Variable-Speed Motors in the Paper Mill. Paper Maker & Brit. Paper Trade J. 86:TS21-22 (Dec. 1, 1933).—A brief discussion of the field of application of such motors in paper mills.—A.P.-C.

Gear Transmission as Applied to Paper Manufacture. J. A. Brown. World's Paper Trade Rev. 101:431-434, 472, 550-554, 678-682, 716-720 (Feb. 9, 16; March 2, 1934).—A general discussion drawing attention to some interesting modern applications.—A.P.-C.

Electrical Equipment for Greaseproof Paper Making. Anon. World's Paper Trade Rev. 100:1848-1856, 1910, 1912 (Dec. 15, 1933.—A description of the electrical equipment installed by the British Thomson-Houston Co., Ltd., at the Dartford plant of Greaseproof Paper Mill, Ltd.—A.P.-C.

Fundamentals of Paper Mill Lighting. W. S. Hadaway. Paper Ind. 16:38-41 (April, 1934).—A general discussion.—A.P.-C.

Analytical and Testing Methods

A New Method for the Determination of Cellulose, Based Upon Observations on the Removal of Lignin and Other Incrusting Materials. Arthur G. Norman and Samuel H. Jenkins. Biochem. J. 27:818-831 (1933).—The cellulosans or polysaccharide material associated with "pure" cellulose must remain intact in any satisfactory method of cellulose estimation. The method proposed for straws and woods involves first two treatments with neutral hypochlorite and then three or more with acid hypochlorite, each followed by boiling with sodium sulfite.—A.P.-C.

A Comparison of Several Methods for Processing Pulp Test Samples. H. W. Morgan. Paper Trade J. 98, No. 15:44-46 (April 12, 1934).—From tests comparing the action of the pebble mill, the metal ball mill, the metal rod mill and the rubber-covered rod mill, it is concluded that both the metal rod and the rubber-covered rod mill are distinct improvements over the pebble mill in that there is no ash introduced in the milled pulp and that the time required for milling is considerably reduced.—A.P.-C.

A Study of Wood Pulp Fractionation. Otto Kress and Forrest W. Brainerd. Paper Trade J. 98, No. 13:35-39 (March 29, 1934).—In unbeaten chemical pulp both chemical and physical properties become poorer in successively shorter fractions. The strength of groundwood increases with decreasing fiber lengths, and only the finest (through 200 mesh) fraction approximates the strength of the original pulp. The effect of beating on fractional composition differs with different pulps.—A.P.-C.

A New Electric Finish, Formation and Plano-Radial Porosity Tester. Frank M. Williams. Paper Trade J. 98, No. 15:41-43 (April 12, 1934).—A description of the construction and operation of the instrument and discussion of its merits.—A.P.-C.

The "T.C.B." Photo-Electric Photo-Colorimeter. Anon. World's Paper Trade Rev. 100:1723-1724 (Dec. 1, 1933).—An explanation of the manner of using it for the precise and rapid colorimetric determination of the pH of a solution.—A.P.-C.

Hammermill Holds 23rd Sales Conference

Gathering of Sales Agents of the Company at Erie, Pa., Is Largest in a Number of Years—Improved Methods and Equipment Additions Which Have Made Hammermill Bond a Better Quality Paper are Discussed—Ernst R. Behrends, President, Presides

[FROM OUR REGULAR CORRESPONDENT]

ERIE, Pa., August 27, 1934—The story of improved methods and equpment additions, which now make Hammermill Bond a better quality paper than ever before in its history, was a discussion highlight at the twenty-third annual conference of Hammermill Paper Company sales agents. This conference, held August 21 and 22 in Erie, —home of the Hammermill plant—was the largest assemblage of its kind in a half-dozen years. One hundred fourteen sales agents from the United States and F. Guillermo Tous, Cia Riera, Toro & Van Twistern, S. A., Havana, Cuba attended.

Visiting speakers included Bruce Barton, of Batten, Barton, Durstine & Osborn, and Arnett W. Leslie, Minneapolis, president of the National Paper Trade association. The latter lauded the business policies for which Hammermill has always stood and in which it has pioneered.

Hammermill's own speakers included General Manager Norman W. Wilson, A. Ellis Frampton, advertising manager and assistant sales manager, and Sales Manager Harrison R. Baldwin.

Announcement of a new duplicator paper, created by Hammermill after much research and now ready for the market, was made by Sales Manager Baldwin.

President Behrends Presides

Presiding at all sessions of the two-day affair was President Ernst R. Behrends of Hammermill.

Newly-elected members of the agents' advisory committee were: P. A. Stuhlreyer, Diem & Wing Paper Company, Cincinnati, Ohio; H. T. Newell, Jackson Paper Company, Jackson, Miss.; Norman W. Fort, the Thos. Price Company, Philadelphia, Pa.

An afternoon program of golf, bowling and horseshoes brought the annual affair to a close.

Sports Winners of Sales Conference

First Division

Golf

Low Gross—Set of Matched Irons—C. R. Smith.
Second Low Gross—Golf Bag—D. A. Hoadley.
Low Net—Onyx Electric Clock—Graham Blandy.
Second Low Net—Dozen Golf Balls—S. T. Jones.

Second Division

Low Gross—Set of Three Matched Clubs—Bruce Barton.
Second Low Gross—Zipper Bag—R. S. Johnston.
Low Net—Onyx Box—C. C. Walden Jr.
Second Low Net—Dozen Golf Balls—F. B. Korbel.
Kickers Handicap—Gladstone Bag—Dana Payne.

Obstacle Golf

First Prize—Lemonade Set and Tray—B. E. Reeves.
Second Prize—Game Sheers—B. R. Moore.

Horseshoes

First Prize—Onyx Book Ends—Albert Wittler.
Second Prize—Bridge Set—J. E. Alcorn.

Bowling

First Prize—Silver Tray—Max Harrison.
Second Prize—Cigarette Case—Winfield Predmore.

Advisory Committee

P. A. Stuhlreyer, Diem & Wing Paper Company, Cincinnati, Ohio.

H. T. Newell, Jackson Paper Company, Jackson, Miss.

Norman W. Fort, The Thos. W. Price Company, Philadelphia, Pa.

John D. Swigart, Swigart Paper Company, Chicago, Ill.

E. W. Julian, Western Newspaper Union, Omaha, Nebraska.

W. N. Stetson, Jr., Storrs & Bement Company, Boston, Mass.

Jake Nacht, Union Card and Paper Company, New York, N. Y.

R. W. Roehm, Beecher, Peck & Lewis, Detroit, Mich.

R. S. Johnston, Old Dominion Paper Company, Norfolk, Va.

H. L. Zellerbach, Zellerbach Paper Company, San Francisco, Calif.

Those In Attendance

Those who attended the conference were as follows:

M. L. Kratz, The Alling & Cory Company, Buffalo, N. Y.; H. S. Kratz, The Alling & Cory Company, Buffalo, N. Y.; J. E. Alcorn, The Alling & Cory Company, Cleveland, Ohio; C. W. Stuyvesant, The Alling & Cory Company, New York, N. Y.; Alan Chandler, The Alling & Cory Company, Pittsburgh, Pa.; B. E. Reeves, The Alling & Cory Company, Rochester, N. Y.

R. P. Andrews, R. P. Andrews Paper Company, Washington, D. C.; W. N. Schaefer, R. P. Andrews Paper Company, Washington, D. C.; B. R. Moore, Andrews Paper House of York, York, Pa.; M. Kiesewetter, Antietam Paper Company, Hagerstown, Md.; W. R. Baxter, Jr., The Baxter Paper Co., Inc., Baltimore, Md.; Geo. F. Schall, Beacon Paper Company, St. Louis, Mo.

A. E. King, Beecher, Peck & Lewis, Detroit, Mich.; G. A. Naumann, Beecher, Peck & Lewis, Detroit, Mich.; R. W. Roehm, Beecher, Peck & Lewis, Detroit, Mich.; E. L. Kramer Beecher, Peck & Lewis, Flint, Michigan; Theodore Greenebaum, Beekman Paper and Card Company, Inc., New York, N. Y.; L. A. Ramaker, The Bouer Paper Company, Milwaukee, Wis., F. M. Smith, The Bouer Paper Company, Milwaukee, Wis.; S. B. Gaines, The Capital City Paper Company, Springfield, Ill.

C. W. Dau, Carpenter Paper Company of Iowa, Des Moines, Iowa; R. S. Cuyler, Carpenter Paper Company, Grand Rapids, Mich.; R. R. Moser, Carpenter Paper Company of Oklahoma, Oklahoma City, Okla.; I. W. Carpenter, Jr., Carpenter Paper Company, Omaha, Neb.; D. A. Hoadley, Carpenter Paper Company, Omaha, Neb.; C. A. Esty, Carter, Rice & Co., Boston, Mass.; H. L. Carter, Carter, Rice & Co., Boston, Mass.

J. S. Caskie, Caskie, Paper Company, Lynchburg, Va.; A. M. Miller, The Central Ohio Paper Company, Columbus, Ohio; A. F. Miller, Central Ohio Paper Company, Columbus, Ohio; K. S. Moening, Central Ohio Paper Company, Toledo, Ohio; W. N. Gillett, Chicago Paper Company, Chicago, Ill.; R. M. Clements, Clements Paper Company, Nashville, Tenn.; R. M. Clements, Jr., Clements Paper Company, Nashville, Tenn.

E. P. Magel, Crescent Paper Company, Indianapolis, Ind.; M. V. Wiggins, Crescent Paper Company, Indianapolis, Inn.; Wm. Wiggins, Crescent Paper Company, Indianapolis, Ind.; Edward Selden, Daka Paper Company, Erie, Pa.; F. Dana Payne, Daka Paper Company, Erie, Pa.; J. H. Bliss, Daka Paper Company, Erie, Pa.; J. M. Knablein, Daka Paper Company, Erie, Pa.; E. G. Ulrich, Daka Paper Co., Erie, Pa.

A. L. Schneider, Diem & Wing Paper Company, Cincinnati, Ohio; C. M. Yates, The Dudley Paper Company, Lansing, Mich.; P. M. Duggan, Durico Paper Company, Erie, Pa.; Geo. J. Kuebal, Durico Paper Company, Erie, Pa.; A. H. Clough, Durico Paper Company, Erie, Pa.; Wm. P. Carney, Durico Paper Company, Erie, Pa.; Henry S. Wuenschel, Durico Paper Company, Erie, Pa.

T. H. Epes, Epes-Fitzgerald Paper Company, Richmond, Va.; Graham Blandy, 2nd, Charles A. Esty Paper Company, Worcester, Mass.; A. C. Thomas, F. A. Flinn, Inc., New York, N. Y., W. R. Grazelle, Holland Paper Company Inc., Buffalo, N. Y.; Fred Stutzman, Holland Paper Company, Inc., Buffalo, N. Y.; S. T. Jones, Hudson Valley Paper Co., Albany, N. Y.; J. B. Binley, Hudson Valley Paper Company, Albany, N. Y.

Albert Wittler, Irwin Paper Company, Quincy, Ill.; H. T. Newell, Jackson Paper Company, Jackson, Miss.; Brook Trout, Johnston, Keffer & Trout, Harrisburg, Pa.; Thomas Lathrop, Lathrop Paper Company, New York, N. Y.; Arnett W. Leslie, John Leslie Paper Company, Minneapolis, Minn.; W. H. Stuart, Henry Lindenmeyer & Sons, St. Louis, Mo.

Chas. M. Bleke, Mack-Elliott Paper Company, St. Louis, Mo.; R. M. Hughes, Megargee Brothers, Scranton, Pa.; N. K. Woodward, Midwestern Paper Company, Kansas City, Mo.; R. S. Johnston, Old Dominion Paper Co., Norfolk, Va.; A. D. Cleveland, E. C. Palmer & Co., Ltd., New Orleans, La.; W. Predmore, Paper Merchants, Inc., Philadelphia, Pa.; O. Freile, Paper Merchants, Inc., Philadelphia, Pa.

F. A. Petrequin, Petrequin Paper Company, Cleveland, Ohio; Norman W. Fort, Thomas W. Price Company, Philadelphia, Pa.; Norman W. Fort, Jr., Thomas W. Price Company, Philadelphia, Pa.; M. Reinhold, Reinhold Card and Paper Company, New York, N. Y.; W. A. Rhodes, S. P. Richards Paper Company, Atlanta, Ga.; E. C. Mead, Richmond Paper Company, Inc., Richmond Va.

George Krisinger, Bradner Smith & Co., Chicago, Ill.; W. D. Williams, Southeastern Paper Company, Louisville, Ky.; H. Ewing Harris, Southeastern Paper Company, Louisville, Ky.; G. R. Likins, Springfield Paper Company, Springfield, Mo.; W. N. Stetson, Jr., Storrs & Bement Company, Boston, Mass.; J. H. Brewer, Storrs & Bement Company, Boston, Mass.

W. C. Strickland, Strickland Paper Company, Inc., Birmingham, Ala.; John D. Swigart, Swigart Paper Company, Chicago, Ill.; Jake Nacht, Union Card and Paper Company, New York, N. Y.; C. R. Smith, Van Reed Paper Company, Reading, Pa.; Howard W. Vernon, Paul E. Vernon & Co., New York, N. Y.; Geo. W. Ward, D. L. Ward Company, Philadelphia, Pa.; Douglas Warner, O. F. H. Warner & Co., Inc., Baltimore, Md.; A. A. Sorensen, Western Newspaper Union, Des Moines, Ia.

J. R. Hedge, Western Newspaper Union, Lincoln, Neb.; E. W. Julian, Western Newspaper Union, Omaha, Neb.; Robert B. Julian, Western Newspaper Union, Omaha, Neb.; E. W. Buckley, Western Newspaper Union, Little Rock, Ark.; Ward Raybould, Western Newspaper Union, Salt Lake City, Utah; George G. Gillen, Western Newspaper Union, Wichita, Kansas; Max W. Harrison, Western Paper Company, Fort Wayne, Ind.; E. L. Walters, Western Newspaper Company, Omaha, Neb.; Calvin Wilson, R. D. Wilson Sons & Co., Clarksburg, W. Va.; Mark Wilson, Jr., R. D. Wilson Sons & Co., Clarksburg, W. Va.

Andrew Lampert, Zellerbach Paper Company, Portland, Ore.; V. E. Hecht, Zellerbach Paper Company, San Francisco, Cal.; C. J. Babcock, Batten, Barton, Durstine & Osborn, New York, N. Y.; S. A. Harned, Batten, Barton, Durstine & Osborn, New York, N. Y.; B. Barton, Batten, Barton, Durstine & Osborn, New York, N. Y.; F. L. Fisher, Central States Envelope Company, Indianapolis, Ind.; E. V. Johnson, United States Envelope Company, Springfield, Mass.; F. B. Korbel, P. P. Kellogg & Co., Div., Springfield, Mass.; E. L. Wood, P. P. Kellogg & Co., Div., Springfield, Mass.

Chas. C. Walden, Jr., Walden, Sons & Mott, New York, N. Y.; Alfred S. Walden, Walden, Sons & Mott, New York, N. Y.; Elwin Walker, Walker Goulard Plehn Co., Inc., New York, N. Y.; J. Borrell, Walker Goulard Plehn Company, Inc., New York, N. Y.; F. G. Tous, Cia Riera, Toro & Van Twisters, S. A., Havana, Cuba; W. H. Howe, Hubbs & Howe, Buffalo, N. Y.; J. R. McDonald, First National Bank, Erie, Pa.; C. T. Roos, National Envelope Company, Div., Waukegan, Ill.; E. H. Naylor, Writing Paper Manufacturers' Association, New York, N. Y.; C. W. Chabot, New York, N. Y.

Cuban Import Duty Temporarily Reduced on Certain Cardboard to Box Manufacturers

[FROM OUR REGULAR CORRESPONDENT]

WASHINGTON, D. C., August 27, 1934—A Cuban decree-law, effective on publication in "LaGaceta Official" of August 11 for a temporay period of 30 days, on importations made by box manufacturers, reduces the import duty (1) on ordinary cardboard, coated with white lead, Kaolin, or other similar substances, from $2.10 to $1.05 per 100 kilograms to the United States, (2) on ordinary cardboard manufactured on a base of wastepaper or newspaper, colored on one or both sides or covered with white or colored paper, not fancy, from $2.45 to $1.225 per 100 kilograms to the United States, and (3) on ordinary cardboard manufactured on a base of wastepaper or newspaper, in the natural color of manufacture, from $2.10 to $0.735 per 100 kilograms to the United States, Commercial Attache Walter J. Donnelly, Habana, has advised the Department of Commerce.

The temporarily reduced duties will also apply to importations made since June 15, on which duties have not been paid.

Hollingsworth Promotion Program

A constructive new sales promotion program, planned to extend for a period of twelve months, is now being launched by the Hollingsworth & Whitney Company, paper manufacturers, Boston, Mass. Unusual portfolios and a series of striking mailing pieces will cover the market for the six Hollingsworth & Whitney business papers: Hollingsworth Basic Bond, Hollingsworth Basic for the Mimeograph, Hollingsworth Basic Ledger, Hollingsworth Basic Index, Hollingsworth Basic Bristol, and Hollingsworth Basic Postcard. The keynote of the series is hard, practical, sincere selling on a business basis. A novel feature of the folders is a series of charts which dramatizes, in graphic terms, the actual uses and values of Hollingsworth & Whitney papers in terms of business operations.

IMPORTS OF PAPER AND PAPER STOCK

NEW YORK, BOSTON, PHILADELPHIA AND OTHER PORTS

NEW YORK IMPORTS

WEEK ENDING AUGUST 25, 1934

CIGARETTE PAPER

De Manduit Paper Corp., Washington, Havre, 145 cs.; American Tobacco Co., Lafayette, Havre, 130 cs.; Standard Products Corp., Lafayette, Havre, 60 cs.; Champagne Paper Corp., Schodack, Havre, 672 cs.

WALL PAPER

C. F. Lamalle, Westernland, Antwerp, 1 cs.; ———, Washington, Havre, 6 cs.; S. K. Lonegren, Drottningholm, Gothenburg, 1 cs.; F. J. Emmerich, A. Ballin, Hamburg, 4 cs.; Richard Shipping Co., A. Ballin, Hamburg, 9 bls.

NEWSPRINT

International Paper Co., Humberam, Dalhousie, 5389 rolls; Great Atlantic Paper Co., Hallaren, Hallstavik, 223 rolls; Brooklyn Times, Hallaren, Norrkoeping, 674 rolls; ———, Hallaren, Kotka, 223 rolls; Jay Madden Corp., Hallaren, Kotka, 424 rolls; ———, Stavangerfjord, Oslo, 465 rolls; Walker, Goulard, Plehn Co., Washington, Hamburg, 78 bls.; Parsons & Whittemore, Inc., A. Ballin, Hamburg, 350 rolls; Perkins, Goodwin & Co., A. Ballin, Hamburg, 107 rolls.

PRINTING PAPER

———, Westernland, Antwerp, 7 rolls; ———, American Banker, London, 46 rolls, 4 cs.; E. Dietzgen & Co., Stattgart, Bremen, 22 cs.; Hensel, Bruckman & Lorbacher, A. Ballin, Hamburg, 6 cs.; T. N. Fairbanks, Aquitania, Southampton, 1 cs.

WRAPPING PAPER

C. S. Allen Corp., American Banker, London, 4 cs.; E. Dietzgen & Co., Stuttgart, Bremen, 4 cs.; T. Barrett & Son, Drottningholm, Gothenburg, 12 bls.

FILTER PAPER

C. Schleicher & Schull Co., Albert Ballin, Hamburg, 2 cs.; ———, Albert Ballin, Hamburg, 100 bls.; H. Reeve, Angel & Co., Inc., American Banker, London, 4 cs.

DRAWING PAPER

H. Reeve, Angel & Co., Inc., American Banker, London, 5 cs.; Lansen, Naeve Corp., Stuttgart, Bremen, 3 cs.

SURFACE COATED PAPER

Gevaert Co. of America, Westernland, Antwerp, 84 cs.; Globe Shipping Co., Stuttgart, Bremen, 15 cs., 25 crates; J. J. Gavin, A. Ballin, Hamburg, 3 cs.

METAL PAPER

Hensel, Bruckman & Lorbacher, A. Ballin, Hamburg, 1 cs.

DECALCOMANIAS

Sellers Transportation Co., A. Ballin, Hamburg, 7 cs.

TRANSFER PAPER

Fuchs & Lang Manfg. Co., Washington, Hamburg, 11 cs.; Rohner, Gehrig Co., Bremen, Bremen, 9 cs.

STENCIL PAPER

Chas. Happel, Westernland, Antwerp, 5 cs.

GUMMED PAPER

Heemsoth, Basse & Co., Stuttgart, Bremen, 6 cs.

MISCELLANEOUS PAPER

Steiner Paper Corp., Westernland, Antwerp, 15 cs.; The Morillo Co., Westernland, Antwerp, 8 cs.; H. Reeve, Angel & Co., Inc., A. Banker, London, 4 cs.; D. C. Andrews & Co., Washington, Hamburg, 3 cs.; The Borregaard Co., Inc., Drottningholm, Gothenburg, 258 rolls, 6 bls.; Blauvelt, Wiley Paper Manfg. Co., Drottningholm, Gothenburg, 45 rolls; E. H. Sargent & Co., Drottningholm, Gothenburg, 7 cs.; Bradley & Baker, A. Ballin, Hamburg, 31 cs.

RAGS, BAGGINGS, ETC.

A. W. Fenton, Inc., Cold Harbor, Manchester, 22 bls. bagging; ———, Cold Harbor, Manchester, 201 bags old pickers; ———, Excamion, Alexandria, 157 bls. rags; Phila. National Bank, A. Ballin, Hamburg, 195 bls. cotton waste.

CASEIN

D. C. Andrews & Co., A. Ballin, Hamburg, 50 bags.

WOOD PULP

Bulkley, Dunton & Co., Black Heron, ———, 280 bls. wood pulp; Castle & Overton, Inc., Hallaren, Wiborg, 1605 bls. wood pulp, 318 tons; Castle & Overton, Inc., A. Ballin, Hamburg, 660 bls. wood pulp, 132 tons; Bank of N. Y. Trust Co., A. Ballin, Hamburg, 2905 bls. wood pulp, 581 tons; Chemical Bank Trust Co., Stavangerfjord, Oslo, 342 bls. sulphite; J. Anderson & Co., Stavangerfjord, Oslo, 2250 bls. sulphite; J. Anderson & Co., Drottningholm, Gothemberg, 250 bls. sulphite; Perkins Goodwin & Co., Drottningham, Gothenburg, 137 bls. sulphate; Atterbury Bros., Inc., Drottningholm, Gothenburg, 300 bls. chemical pulp; Gottesman & Co., Inc., Drottningholm, Gothenburg, 1650 bls. sulphate.

WOOD PULP BOARDS

Johaneson, Wales & Sparre, Inc., Hallaren, Wiborg,

254 rolls, 58 tons; Lagerloef Trading Co., Hallaren, Wiborg, 70 bls., 16 tons.

ALBANY IMPORTS

WEEK ENDING AUGUST 25, 1934

Bulkley, Dunton & Co., Simon von Utrecht, ———, 1500 bls. wood pulp.

PORTLAND IMPORTS

WEEK ENDING AUGUST 25, 1934

Bulkley, Dunton & Co., Etna, ———, 4000 bls. wood pulp; Bulkley, Dunton & Co., Carlsholm, ———, 1000 bls. wood pulp.

BOSTON IMPORTS

WEEK ENDING AUGUST 25, 1934

Bulkley, Dunton & Co., Malmen, ———, 125 bls. wood pulp; Bulkley, Dunton & Co., Vigor, ———, 4200 bls. wood pulp; Royal Manfg. Co., Britannic, Liverpool, 50 bls. cotton waste; Ayres, W. C. Jones Co., Britannic, Liverpool, 54 bls. cotton waste; International Paper Co., Humberarm, Dalhousie, 1062 rolls newsprint; Bank of Montreal, Humberarm, Corner Brook, 1928 rolls newsprint; Crocker, Burbank Co., American Banker, London, 289 bls. waste paper.

PHILADELPHIA IMPORTS

WEEK ENDING AUGUST 25, 1934

Daily News, Hallaren, Hallstavik, 921 rolls newsprint; J. W. Hampton, Jr., Hallaren, Kotka, 130 rolls newsprint; Irving Trust Co., Toronto, Oslo, 750 bls. chemical pulp; J. Andersen & Co., Toronto, Greaker, 300 bls. sulphite; ———, Toronto, Drammen, 379 rolls newsprint; Chemical Bank Trust Co., Toronto, Tofte, 1800 bls. wood pulp; Lagerloef Trading Co., Hallaren, Wiborg, 4500 bls. wood pulp; Jay Madden Corp., Scanyork, Wiborg, 14 bbls. tissue paper; Castle & Overton, Inc., Wido, Hamburg, 4700 bls. wood pulp; Bank of N. Y. Trust Co., Wido, Hamburg, 350 bls. wood pulp; J. Anderson & Co., Wido, Bremen, 252 bls. wood pulp; Scott Paper Co., Elviva Port Medway, 2080 tons wood pulp; ———, Fordefjord, Port Alfred, 3791 rolls newsprint.

BALTIMORE IMPORTS

WEEK ENDING AUGUST 25, 1934

Bulkley, Dunton & Co., Simon von Utrecht, ———, 1125 bls. wood pulp; Bulkley, Dunton & Co., West Arrow, ———, 1120 bls. wood pulp; ———, Cold Harbor, Liverpool, 141 coils old rope.

NORFOLK IMPORTS

WEEK ENDING AUGUST 25, 1934

Darmstadt, Scott & Courtney, Cold Harbor, Manchester, 102 bls. bagging; Darmstadt, Scott & Courtney, Cold Harbor, Manchester, 100 bls. paper stock.

James R. Carter Resigns

James R. Carter, 2d, who has made many friends in the paper industry since becoming associated with the American Paper and Pulp Association, has resigned as secretary of the Bristol Board Manufacturers Association, and the Cardboard Manufacturers Association, to become associated with the Nashua Gummed and Coated Paper Company, of Nashua, N. H.

Mr. Carter has been succeeded by William R. Driver, Jr., formerly with the Central Hanover Bank, New York.

Preservation of Newspaper Records

Most of the newspapers published in the United States since 1868 are probably doomed to extinction through decay of the paper, unless preservative or reproductive measures are employed, according to a report by B. W. Scribner recently issued by the Bureau of Standards. The report describes in detail the results of an examination of 18 Eastern and 9 West Coast newspapers published during the period 1830 to 1900.

The papers published before 1868 were printed on rag fiber paper. These were in excellent condition and the Bureau states that they should endure indefinitely if protected against external deteriorative influences. Some papers published from 1868 to 1880 were found to be composed of straw fibers, and mixtures of straw, wood, and rag fibers, all chemically treated, and nearly all of these were in good condition. Most of the papers published since 1868 contained crude ground wood fiber and they were generally in an advanced state of decay. The resumption in 1927, by some publishers, of the use of papers composed of high-grade fibers for permanent library editions, will probably preserve some subsequent records, as tests indicated that satisfactory paper has been developed for this purpose.

The Bureau found that the practice of covering newspapers with strong japanese tissue paper, as developed by the New York Public Library, greatly increased their strength and stability. Transparent cellulose acetate sheeting also gave very promising results. But, it is stated, protective measures such as these can at the best only prolong the life of the papers; they cannot preserve them indefinitely. Reproduction of the newspaper records in permanent form can be done by photostatic or lithographic printings; the Bureau found that stable papers are available for such printing and the prints are stable. Reproduction in miniature and enlargement for reading are said to offer the ultimate solution for large-scale operations because of the necessity for conservation of library storage space. The technic of using filmslides for this purpose has reached satisfactory development, but while it is known that filmslides may be quite stable, the Bureau states that further investigation of their stability is desirable.

Copies of the report, Miscellaneous Publication No. 145, can be obtained from the Superintendent of Documents, Washington, for 5 cents (cash).

News Print Exports Up

MONTREAL, Que., August 27, 1934.—The Dominion Bureau of Statistics, in a report for July, shows that the value of newsprint exports for that month was nearly $1,000,000 higher than in the same month last year. Total value for July was $7,263,463, as compared with $6,281,525 in July, 1933. On the comparison for the 12 months ending July, the increase in value was smaller than the increase in tonnage, the value gaining 15 per cent as against an increase in tonnage of 27 per cent. In volume the exports for July amounted to 4,043,547 cwt., as against 3,346,053 cwt. in July, 1933. For the 12 months ending July the exports amounted to 44,337,377 cwt., valued at $77,326,152, as against 33,721,538 cwt., valued at $69,527,488 for the 12 months ending July, 1933.

Exports of paper to the United States were valued at $5,870,523 out of the July total of $7,668,386 for paper of all grades.

Exports of pulp from Canada—with the United States as the principal market—were valued at $2,180,952 in July, 1934, as compared to $2,327,980 in July, 1933, and $2,116,134 in June, 1934.

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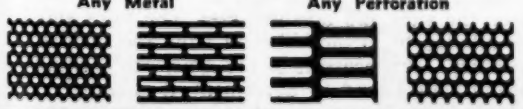

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PAPER MANUFACTURERS CO. INC.
PHILADELPHIA, PA.

New York Market Review

Office of the PAPER TRADE JOURNAL,
Wednesday, August 29, 1934.

Conditions in the local paper market are practically unchanged. While the prevailing demand is light, however, due to seasonal causes, there are a number of inquiries around, indicating a revival of business in the near future. Prices are generally holding to formerly quoted levels without difficulty.

The newsprint paper market is fairly active. According to *Advertising Age*, July newspaper lineage in 77 leading cities was 6.4 per cent ahead of July, 1933. Retail advertising was up 6.7 per cent, automotive 16.3, general 7 and classified 4.3 per cent. Only financial advertising was down, losing 24.8 per cent. The newsprint price situation remains unchanged.

Demand for the various standard grades of fine paper is listless. Prices are holding to schedule. Tissues are moving in fairly good volume for the season. The coarse paper market is rather dull, although summer specialties are still in good request. The paper board industry looks for expansion of trading during the closing months of the year.

Mechanical Pulp

The ground wood pulp market is easier. Quotations on imported mechanical pulp have declined. No. 1 moist is now offered at from $23 to $25 per ton and dry at from $24 to $26 per ton, on dock, Atlantic ports. No. 1 domestic and Canadian ground wood pulp remains unchanged and are selling at from $22 to $26 per ton, f.o.b. mill.

Chemical Pulp

Although demand for domestic and imported chemical pulp is restricted at present, the outlook for the Autumn is promising. All grades are steady, with the exception of kraft pulp, which is slightly easier. Domestic and imported bleached sulphite are still offered at from $2.75 to $2.85. All prime easy bleaching is quoted at $2.25 per 100 pounds, at shipping points.

Old Rope and Bagging

The old rope market is rather quiet. Both domestic and foreign old manila rope, however, are steady and unchanged. Small mixed rope is moving in moderate volume. The bagging market is slightly stronger. Demand for gunny bagging is improving. Scrap bagging continues dull, but steady. Roofing bagging is in seasonal request.

Rags

Sentiment is more hopeful in the domestic rag market than of late. New cotton rags are generally going forward in satisfactory volume for the time of year. Export demand for several grades is well sustained. Roofing rags are moving into consumption more freely. No radical changes have transpired in the imported rag market.

Waste Paper

The minimum price on all sales of folded news has been established at $8.50 per ton in all sales to mills and at $6.50 per ton on No. 1 mixed paper, both f.o.b. packer's plant. According to the NRA order, these quotations are effective for ninety days, or until November 19. The higher grades of mixed paper are exhibiting a strong undertone.

Twine

During the past week most of the business transacted in the local twine market was along routine lines. With the approach of the Fall season, however, paper merchants specializing in twines are optimistic regarding the future and anticipate a revival of active trading shortly. Prices are generally holding to schedule.

New Paper Testing Standards

Adoption of three new paper testing standards by the Technical Association of the Pulp and Paper Industry is announced by the chairman of the association's Paper Testing Committee, B. W. Scribner, of the National Bureau of Standards.

In the association method for amount of mineral coating, the use of an enzyme for removal of the coating, as recommended by Sutermeister and Porter, was adopted, as it is more effective than ammonia which was previously specified. Two new methods were adopted: ink absorption of blotting paper and water absorption of bibulous paper such as toweling. The former is based on Reed's procedure of finding the time required for complete absorption of 1 ml of ink flowed on the paper. Water absorption is tested similarly except that smaller volumes of water are used; 0.1 ml for toweling and 0.01 ml for more resistant products. A special pipette device for accurate delivery of a very small amount of water at the desired angle in making absorption tests is described in a Bureau publication.

Copies of the methods can be obtained from the association, 122 East 42nd St., New York, N. Y., at 25c each.

Water Power Co. Sues American Writing

BOSTON, Mass., August 23, 1934.—The Holyoke Water Power Company, of Holyoke, Mass., filed a bill here today in the Federal Court against the American Writing Paper Company charging the latter with violation of terms of sales of 15 mill sites in Holyoke. Damages of $80,000 is alleged.

The Holyoke Water Power Company asks temporary and permanent injunctions against the American Writing Paper Company restraining it from alleged transmission of electric power from mill sites sold with the understanding that power generated on the sites was to be used on the sites and nowhere else. The sales and agreements alluded to in the bill date from the middle of the last century. Predecessors of the American Writing Paper Company were bound by agreement, it is stated.

Protests against the alleged transmission of power off some or all of the 15 sites involved in the agreement have been ignored, it is asserted. Damages, estimated up to now at $80,000, continue to pile up, the bill says. A temporary injunction is asked, pending the issuance of permanent injunctions.

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Selling Agents
21 East 40th Street
New York

CHEMICAL & MECHANICAL PULP

Kraft Pulp
BERGVIK OCH ALA NYA AKTIEBOLAG
Söderhamn, Sweden
KALIX TRÄINDUSTRI AKTIEBOLAG
Vanaljärden, Sweden
MUNKSUNDS AKTIEBOLAG
Munksund, Sweden
NENSJÖ CELLULOSA A.-B.
Sprängsviken, Sweden

Bleached Sulphite
KELLNER-PARTINGTON PAPER PULP CO., LTD.
Sarpsborg, Norway
Edsvalla, Sweden
Hollein & Villach, Austria

Unbleached Sulphite
AKTIESELSKABET GREAKER CELLULOSEFABRIK
Greaker, Norway
BERGVIK OCH ALA NYA AKTIEBOLAG
Söderhamn, Sweden
CELLULOSEFABRIKS A.-G.
Bratislava, Czecho-Slovakia
SVANÖ AKTIEBOLAG
Svanö, Sweden

Miscellaneous Markets

Office of the PAPER TRADE JOURNAL,
Wednesday, August 29, 1934.

BLANC FIXE.—The position of the blanc fixe market is practically unchanged. Prices are holding to schedule. The pulp is quoted at from $42.50 to $45 per ton, in bulk; while the powder is selling at from 3½ to 3¾ cents per pounds, in barrels, at works.

BLEACHING POWDER.—Demand for bleaching powder is listless. Contract shipments are moving in moderate volume, due to seasonal conditions. Prices remain unchanged. Bleaching powder is quoted at from $1.90 to $2.15 per 100 pounds, in drums, at works.

CASEIN.—The casein market continues to mark time. Domestic standard ground is quoted at 12¼ and finely ground at 12¾ cents per pound, in bags, car lot quantities. Offerings of Argentine standard ground and finely ground are scarce and prices nominal.

CAUSTIC SODA.—Steadiness prevails in the caustic soda market. The contract movement is normal. Solid caustic soda is quoted at from $2.60 to $3.10; while the flake and ground are selling at from $3 to $3.05 per 100 pounds, in large drums, at works.

CHINA CLAY.—The china clay market is moderately active. Prices are holding to schedule. Imported china clay is still quoted at from $13.50 to $21 per ton, ship side; while domestic paper-making clay is selling at from $5 to $12 per ton, at works.

CHLORINE.—Paper mill demand for chlorine is fairly persistent. The contract movement is well up to average. Prices are steady to firm. Chlorine is quoted at from $2 to $2.25 per 100 pounds, in tanks, or multi-unit cars, in ton lots, or over, at works.

ROSIN.—The rosin market is more buoyant. Paper making gum rosin is still quoted at from $5.50 to $5.65 per 280 pounds, in barrels, at works; wood rosin at $4.20 per 280 pounds, in barrels, and rosin wax size at 5 cents per pound, from shipping points.

SALT CAKE.—Business in the salt cake market is fairly active. Prices are holding to schedule. Salt cake is quoted at from $12 to $14, and chrome salt cake at from $12 to $12.50 per ton, at works. Imported salt cake is selling at from $12 to $12.50 per ton, on dock.

SODA ASH.—The soda ash market continues quiet. Contract shipments are moving in good volume for the season. Prices are firm. Quotations on soda ash, in car lots, at works, per 100 pounds, are as follows: in bulk, 1.10; in bags, $1.40; and in barrels, $1.50.

STARCH.—Conditions in the starch market are improving. Prices continue steady to firm, influenced by the strength of the basic product. Special paper making starch is quoted at $3.57 per 100 pounds, in bags; and at $3.84 per 100 pounds, in barrels, at works.

SULPHATE OF ALUMINA.—The sulphate of alumina market is rather dull at present. Contract shipments are moving slowly. Commercial grades are still quoted at from $1.35 to $1.50; while iron free is selling at from $1.90 to $2.05 per 100 pounds, in barrels, at works.

SULPHUR.—The sulphur market continues steady. Sulphur is quoted at $18 per long ton on orders of 1,000 tons, or over, on yearly contracts; and at $20 per ton on any smaller quantity over that period. On spot and near by car loads, the quotation is $21 per ton.

TALC.—Trading in the talc market is listless at present but should improve materially after the holidays. Domestic talc is quoted at from $16 to $18 per ton, in bulk, at eastern mines; while imported talc is selling at from $23 to $30 per ton, on dock.

Market Quotations

Paper

(F. o. b. Mill)

Ledgers	6.50	@	—
Bonds	6.00	@	—
Index	6.00	@	—
Writings—			
Extra Superfine	6.50	@	—
Superfine	6.25	@	—
Tub sized	5.75	@	—
Engine sized	5.50	@	—
Book, Cased—			
S. & S. C.	5.35	@	5.75
S. & S. C. Litho.	5.60	@	6.00
M. F.	5.10	@	5.50
Coated and Enamel	5.90	@	6.55
Coated Litho	5.90	@	6.55
Tissues—Per Ream—			
White No. 1	.82½	@	.85
White No. 2	.67½	@	—
Anti-Tarnish M. G. only	1.00	@	—
Colored	.85	@	—
Kraft	.70	@	—
Manila	.67½	@	.70
Manila—			
No. 1 Jute	9.00	@	9.25
No. 2 Jute	7.75	@	8.50
No. 1 Wood	4.00	@	5.25
No. 2 Wood	3.50	@	4.00
Butchers	4.00	@	4.50
Fibre Papers—			
No. 1 Fibre	4.25	@	5.50
No. 2 Fibre	4.00	@	4.75
Common Bogus	1.50	@	3.00
Screenings	2.50	@	3.50
Glassine—			
Bleached	.11	@	—
Unbleached	.09	@	—

(The following Quotations are Delivered New York)

News, per ton—			
Roll, contract	40.00	@	—
Rolls, spot	40.00	@	—
Sheets	45.00	@	—
Kraft—			
No. 1 Domestic	4.75	@	5.00
No. 2 Domestic	3.87½	@	—
Southern	3.87½	@	—
Boards—per ton—			
News	40.00	@	45.00
Chip	37.50	@	40.00
Sgl. Mla. Ll. Chip	52.50	@	57.50
Jute Lined Chip	47.50	@	52.00
White Patent Coated	60.00	@	65.00
Binders Boards	67.00	@	75.00

Mechanical Pulp

(On Dock, Atlantic Ports)

No. 1 Imported—			
Moist	23.00	@	25.00
Dry	24.00	@	26.00

(F.o.b. Mill)

No. 1 Domestic and Canadian	22.00	@	26.00

Chemical Pulp

(On Dock, Atlantic, Gulf and West Coast Ports)

Bleached Sulphite (Domestic and Foreign)—			
Division 1	2.85	@	—*
Division 2	2.80	@	—*
Division 3	2.75	@	—*
Prime Qualities—			
Class 1. All Prime Easy Bleaching	2.25	@	—*
Other Than Easy Bleaching—			
Class 2. Higher Than Standard	2.20	@	—*
Class 3. Standard	2.15	@	—*
Class 4. Lower than Standard	2.10	@	—

(On Dock, Atlantic Ports)

Kraft No. 1	1.85	@	1.90
Kraft No. 2	1.60	@	1.70

(F.o.b. Pulp Mill)

Kraft Domestic	1.60	@	2.75
(Delivered)			
Soda Bleached	2.50	@	—

*Add 60 Cents per short ton, dock charges, for Albany; $2.00 for Lake Ports East and $3.00 for Lake Ports West of Mackinac Straits.

Domestic Rags

New Rags

(Prices to Mill f. o. b. N. Y.)

Shirt Cuttings—			
New White, No. 1	5.75	@	6.00
Silesias No. 1	3.75	@	4.00
New Unbleached	6.25	@	6.50
New Soft Blacks	3.00	@	3.25
Blue Overall	3.50	@	3.75
Fancy	2.50	@	2.75
Washables	1.75	@	2.00
Mixed Khaki Cuttings	3.00	@	3.25
O. D. Khaki Cuttings	3.75	@	4.00
Men's Corduroy	1.50	@	1.75
New Mixed Blacks	2.50	@	2.75

Old Rags

White, No. 1—			
Repacked	3.00	@	3.50
Miscellaneous	2.75	@	3.25
White, No. 2—			
Repacked	1.75	@	2.25
Miscellaneous	1.50	@	1.75
Thirds and Blues—			
Repacked	1.50	@	1.75
Miscellaneous	1.25	@	1.50
Black Stockings	2.50	@	3.00
Roofing Rags—			
No. 1	1.10	@	1.25
No. 2	.80	@	.85
No. 3	.70	@	.75
No. 4	.65	@	.70
No. 5A	.60	@	.65

Foreign Rags

New Rags

New Dark Cuttings	1.60	@	1.70
New Mixed Cuttings	1.75	@	1.85
New Light Silesias	3.75	@	4.00
Light Flanelettes	3.75	@	4.00
Unbleached Cuttings	6.50	@	6.75
New White Cuttings	6.50	@	6.75
New Light Oxfords	3.25	@	3.50
New Light Prints	2.75	@	3.00

Old Rags

No. 1 White Linens	7.50	@	8.00
No. 2 White Linens	6.50	@	7.00
No. 3 White Linens	4.50	@	5.00
No. 4 White Linens	2.25	@	2.50
No. 1 White Cotton	4.25	@	4.75
No. 2 White Cotton	3.25	@	3.75
No. 3 White Cotton	2.50	@	2.75
No. 4 White Cotton	1.90	@	2.15
Extra Light Prints	2.00	@	2.25
Ord. Light Prints	1.75	@	1.85
Med. Light Prints	1.55	@	1.65
Dutch Blue Cottons	1.75	@	1.85
French Blue Linens	2.30	@	2.40
German Blue Linens	2.15	@	2.25
German Blue Cottons	1.70	@	1.80
Checks and Blues	1.30	@	1.40
Linsey Garments	1.40	@	1.60
Dark Cottons	1.00	@	1.10
Old Shopperies	.95	@	1.00
New Shopperies	.90	@	1.00
French Blues	1.70	@	1.80

Old Rope and Bagging

(Prices to Mill f. o. b. N. Y.)

Gunny No. 1—			
Foreign	1.50	@	1.60
Domestic	1.40	@	1.50
Wool Tares, light	1.20	@	1.30
Wool Tares, heavy	1.20	@	1.30
Bright Bagging	1.15	@	1.25
Manila Rope—			
Foreign	2.35	@	2.45
Domestic	2.25	@	2.50
Small Mixed Rope	1.10	@	1.35
New Burlap Cut	2.00	@	2.25
Hessian Jute Threads—			
Foreign	2.60	@	2.75
Domestic	2.80	@	3.00

Old Waste Papers

(F. o. b. New York)

Shavings—			
White Envelope Cuttings	2.70	@	2.80
Ordinary Hard White No. 1	2.15	@	2.25
Hard White No. 2	1.95	@	2.05
Soft White No. 1	1.85	@	1.95
Flat Stock—			
Stitchless	.80	@	.90
Over issue Mag.	.80	@	.90
Solid Flat Book	.65	@	.75
Crumpled No. 1	.60	@	.65
Solid Book Ledger	1.50	@	1.65
Ledger Stock	1.00	@	1.10
New B. B. Chips	.30	@	.35
Manilas—			
New Env. Cut	1.70	@	1.80
New Cuttings	1.35	@	1.45
Print	Nominal		
Bogus Wrapper	.40	@	.50
Container	Nominal		
Old Kraft Machine—			
Compressed bales	1.10	@	1.20
News—			
No. 1 White News	1.15	@	1.25
Strictly Overissue	.65	@	.70
Strictly Folded	.42½	@	.50
No. 1 Mixed Paper	.32½	@	.40

Twines

(F. o. b. Mill)

Cotton—			
B. C. 18 basis	.30	@	.32
No. 1	.20	@	.22
No. 2	.19	@	.20
No. 3	.17	@	.18
A. Italian, 18 basis	.36	@	.37
Finished Jute—			
Dark, 18 basis	.18	@	.20
Light, 18 basis	.20	@	.22
Jute Wrapping, 3-6 Ply—			
No. 1	.15½	@	.16½
No. 2	.15	@	.16
Tube Rope—			
4-ply and larger	.09¼	@	.09¾
Fine Tube Rope—			
4-ply	.11¼	@	.11¾
3-ply	.14¼	@	.14¾
2-ply	.14¼	@	.14¾
Paper Makers Twine	.08¼	@	.13¼
Box Twine, 2-3 ply	.14¼	@	.14¾
White Hemp	.13¼	@	.16¾
Java Sisal—			
No. 1 Basis	.11½	@	—
No. 2 Basis	.10½	@	—
New Zealand Sisal	.11½	@	—
Sisal Lath Yarn—			
No. 1	.13½	@	.15½
No. 2	.11½	@	.13½
Manila Twine	.24½	@	.29½

CHICAGO

Paper

(F. o. b. Mill)

Rag Bond	.12	@	.50
Water Marked Sulphite Bond	.06¾	@	.11
Sulphite Bond	.05½	@	.11
Superfine Writing	.18	@	.24
No. 1 M. F. Book	.06½	@	.07¼
No. 2 M. F. Book	.05¼	@	.06¾
No. 1 S.&S.C. Book	.06¾	@	.07¾
No. 2 S.&S.C. Book	.05¾	@	.06½
Coated Book	.07	@	.12
Coated Label	.07	@	.08½
No. 1 Manila	.04¼	@	.05¾
No. 1 Fibre	.04¾	@	.05¼
No. 2 Manila	.04¼	@	.04¾
Butcher's Manila	.03¾	@	.03¾
No. 1 Kraft	4.75	@	5.00
Southern Kraft	3.88	@	4.25
No. 2 Kraft	3.88	@	4.25
Wood Tag Boards	.04¼	@	.05¾
Sulphite Screenings	.03	@	.03½
Manila Tissue	.05¾	@	.07
White Tissue	.07	@	.09

(Delivered Central Territory)

News, per ton—			
Rolls, contract	41.00	@	—
Sheets, open	46.00	@	51.00
Boards, per ton—			
Plain Chip	46.50	@	—
Solid News	50.00	@	—
Manila Lined Chip	55.00	@	—
Patent coated	65.00	@	—
Container Lined—			
85 Test, per 1000 sq. ft.			1.70
100 Test, per 1000 sq. ft.			1.85

Old Papers

(F. o. b. Chicago)

Shavings—			
No. 1 White Envelope cuttings	1.70	@	2.00
No. 1 Hard White	1.40	@	1.65
No. 1 Soft White	1.25	@	1.50
Ledger & Writings	.70	@	.80
Solid Books	.60	@	.70
Blanks	1.00	@	1.05
Krafts	.80	@	.90
New Kraft Cuts	1.20	@	1.30
Manila Env. Cuts	1.25	@	1.30
Ex. No. 1 Manila	.90	@	1.00
Print Manila	.50	@	.55
Overissue News	.60	@	.70
Old Newspapers—			
No. 1	.50	@	.55
Mixed Papers—			
No. 1	.30	@	.35
Roofing Stocks—			
No. 1	30.00	@	—
No. 2	28.00	@	—

PHILADELPHIA

Paper

(Delivered Philadelphia)

Bonds	.05-9/10	@	.38
Ledgers	.06 9/10	@	.40
Writings—			
Fine No. 3	.05	@	.06
Superfine	.10	@	.18
Extra Fine	.15	@	.24
Fine	.15	@	.24
Fine, No. 2	.10	@	.25
Book, M. F.	.05¼	@	.06¼
Book, S. S. & C.	.05	@	.07½
Book, Coated	.06½	@	.09
Coated Lithograph	.06¾	@	.08½
[illegible]	.07	@	.11
No. 1 Jute Manila	6.25	@	—
Manila Sul., No. 1	5.25	@	—
Manila No. 2	3.00	@	—
No. 1 Kraft	5.00	@	—
Southern Kraft	4.75	@	—
Common Bogus	.03	@	.04½
News Print Rolls	46.00	@	55.00
Straw Board	40.00	@	45.00
News Board	50.00	@	—
Chip Board	45.00	@	—
Wood Pulp Board	70.00	@	85.00
Binder Boards—			
No. 1, per ton	75.00	@	80.00
No. 2, per ton	70.00	@	75.00
Carload lots	65.00	@	70.00
Tarred Felts—			
Regular	52.25	@	54.25
Slaters (per roll)	.84	@	.94
Best Tarred, 1-ply (per roll)	1.95	@	2.10
Best Tarred, 2-ply (per roll)	1.50	@	1.60
Best Tarred, 3-ply	2.00	@	2.25

Domestic Rags (New)

(Price to Mill, f. o. b. Phila.)

Shirt Cuttings—			
New White, No. 1	.03½	@	.04
New White, No. 2	.02½	@	.04
Light Silesias	.02½	@	.03
Silesias, No. 1	.03	@	.03½
Black Silesias, soft	.02½	@	.03
New Unbleached	.05	@	.05½
Washable, No. 1	.01½	@	.02
Blue Overall	.03½	@	.04
Cotton—According to grades—			
Washable, No. 2	.02½	@	.03
New Blue	.01½	@	.03
Fancy	.01½	@	.03
New Black Soft	.02	@	.04
New Light Seconds	.01½	@	.02
New Dark Seconds	1.50	@	1.75

Domestic Rags (Old)

Khaki Cuttings—			
No. 1 O.D.	.03	@	.04
No. 2 Mixed	.03	@	.04
Corduroy	.02	@	.03
New Canvas	.03½	@	.04½
New Black Mixed	.02½	@	.03½
White No. 1—			
Repacked	2.50	@	3.50
Miscellaneous	1.75	@	2.25
M. G.	3.00	@	3.75
Thirds and Blues—			
Miscellaneous	1.00	@	1.50
Repacked	1.50	@	2.00
Black Stockings (Export)	2.00	@	3.50
Roofing Stock—			
Foreign No. 1	.50	@	.75
Repacked	.70	@	.85

Bagging

(F. o. b. Phila.)

Gunny, No. 1—			
Foreign	1.25	@	1.50
Domestic	1.50	@	1.75
Manila Rope	2.00	@	2.25
Sisal Rope	1.25	@	1.50
Mixed Rope	1.00	@	1.10
Scrap Burlaps—			
No. 1	1.25	@	1.50
No. 2	.80	@	1.00
Wool Tares, heavy	2.75	@	—
Mixed Strings	1.15	@	1.45
No. 1 New Light Burlap	2.25	@	2.50
New Burlap Cuttings	2.00	@	2.25

Old Papers

(F. o. b. Phila.)

Shavings—			
No. 1 Hard White	2.25	@	2.30
No. 2 Hard White	1.90	@	2.00
No. 1 Soft White	1.80	@	1.85
No. 2 Soft White	1.25	@	1.50
No. 1 Mixed	—	@	.75
No. 2 Mixed	—	@	.50
Solid Ledger Stock	1.50	@	1.60
Writing Paper	1.10	@	1.20
No. 1 Books, heavy	—	@	.70
No. 2 Books, light	—	@	.50
No. 1 New Manila	—	@	1.40
No. 1 Old Manila	—	@	.70
Print Manila	—	@	.60
Container Manila	—	@	.50
Old Kraft	1.00	@	1.10
Common Paper	—	@	.20
No. 1 Mixed Paper	—	@	.32½
Straw Board Chip	—	@	.30
Binders Board Chip	—	@	.30
Corrugated Board	—	@	.50
Overissue News	—	@	.50
Old Newspapers	—	@	.42½

BOSTON

Paper

(F. o. b. Mill)

Ledgers—			
Sulphite	.06	@	.12½
Rag Content	.12	@	.30
All Rag	.36	@	.52½
Bonds—			
Sulphite	.07¼	@	.11
Rag Content	.12	@	.40
All Rag	.36	@	.65
Writings	.06½	@	.20
Superfines	.11	@	.31
Book, Super	.06	@	.09
Book, M. F.	.05½	@	.08½
Book, Coated	.08½	@	18
Coated Litho	.09	@	.12
Label	.09½	@	.15
Jute Manila No. 1	.11	@	.13
Manila, Sul. No. 1	.04¼	@	.06½
Manila, Sul. No 2	.03¼	@	.04½
No. 1 Kraft	.04¾	@	.05
No. 2 Kraft	.03½	@	.04¼

(F. o. b. Boston)

Southern Kraft	.03½	@	.04¾

(F. o. b. destination in carload lots, f. o. b. mill in less than carload lots.)

Common Bogus	.02	@	.02¾

(Delivered New England points)

News Print, rolls	44.50	@	—
Straw Board, rolls	.009	—	@35.00
Straw Board in Sheets, basis 35s to 70s	—		@40.00
Filled News Board	40.00		@45.00
Chip Board	37.50		@40.00
Chip Board (Creasing)	37.50		@40.00
Single Manila Lined Chip	47.50		@52.50
Single White, Patent Coated News Board (Bender)	57.50		@65.00
No. [illegible] Board	70.00		@75.00
Binder Boards (Standard Grade)	67.00		@75.00

Old Papers

(F. o. b. Boston)

Shavings—			
No. 1 Hard White	$2.20	@	2.35
No. 1 Soft White	1.75	@	2.00
No. 2 Mixed	.75	@	.80
Solid Ledger Books	1.75	@	—
Overissue Ledger Stock	1.15	@	1.30
Mixed Ledgers	.95	@	1.05
No. 1 Books, heavy	.85	@	.95
No. 1 Books, light	.65	@	.75
Crumpled Stitchless Book Stock	.50	@	.60
Manila Env. Cuttings	1.25	@	1.30
No. 1 Old Manila	.75	@	.80
White Blank News	1.00	@	1.10
No. 1 Kraft	1.05	@	1.10
Manila	.70	@	.75
No. 1 Mixed Papers	.35	@	—
Print Manila	.40	@	.45
Overissue News	.50	@	.52½
Old Newspapers	.45	@	—
Box Board Chips	.32½	@	.35
Corrugated Boxes	.37½	@	.40
Screening Wrappers	.50	@	.60

Bagging

(F. o. b. Boston)

Manila Rope—			
Foreign	1.85	@	2.00
Domestic	2.25	@	2.37½
Transmission Rope	—	@	1.25
Mixed Strings	—	@	.30
Jute Rope	1.50	@	1.60
Jute Carpet Threads	.65	@	.70
Gunny No. 1—			
Foreign	1.50	@	1.60
Domestic	—	@	1.50
Bleachery Burlap	3.00	@	3.25
Scrap Burlap	1.15	@	1.20
Scrap Sisal	1.10	@	1.20
Scrap Sisal for shredding	1.00	@	1.25
Wool Tares, heavy	1.25	@	1.30
New Burlap Cuttings	1.75	@	1.85
Australian Wool Pouches	2.25	@	2.50
Heavy Baling Bagging	1.40	@	1.50
Paper Mill Bagging	.90	@	1.10
Bagging No. 2	.50	@	.55

Domestic Rags (New)

(F. o. b. Boston)

Shirt Cuttings—			
New Light Prints	.01¾	@	.02
New White No. 1.	.05½	@	.06
New White No. 2.	.03½	@	.04
Silesias No. 1	.04	@	—
New Black Silesias	.02½	@	.03
New Unbleached	.05½	@	.06
Blue Cheviot	—	@	4.65
Fancy	—	@	.02¼
Washable	.02¼	@	—
Cottons—According to grades—			
Blue Overalls	—	@	.03¼
New Black, soft	.04	@	.04½
Khaki Cuttings	.03	@	.03¼
O. D. Khaki	.02¾	@	.03
Corduroy	.01¾	@	.02
New Canvas	—	@	.05
B.V.D. Cuttings	—	@	.06¾

Domestic Rags (Old)

(F. o. b. Boston)

Canvas	.04½	@	
White No. 1—			
Repacked	—	@	3.00
Miscellaneous	2.50	@	2.75
White No. 2—			
Repacked	2.00	@	2.75
Miscellaneous	2.00	@	2.25
Twos and Blues	1.25	@	1.50
Thirds and Blues			
Repacked	2.00	@	2.75
Miscellaneous	2.00	@	2.25
Black Stockings	2.25	@	2.50
Roofing Stock			
No. 1	.80	@	.85
No. 2	.65	@	.70
No. 3	.55	@	.60

Foreign Rags

(F. o. b. Boston)

Dark Cottons	.85	@	.95
New White Shirt Cuttings	5.50	@	6.00
Dutch Blues	2.00	@	2.50
New Checks & Blues	2.50	@	3.00
Old Fustians	1.55	@	1.60
Old Linsey Garments	1.25	@	1.35

TORONTO

Paper

(F. o. b. Mill)

Bond—			
No. 1 Sulphite	.10¼	@	—
No. 2 Sulphite	.08½	@	—
No. 1 Colored	.10¼	@	—
No. 2 Colored	.09	@	.10
Ledgers (sulphite)			
Ledgers, No. 1	.34½	@	—
Ledgers, No. 2	.25½	@	—
Writing	.09	@	.09½
Book—			
No. 1 M. F. (Carloads)	6.20	@	—
No. 3 M. F. (Carloads)	5.70	@	—
No. 4 M. F. (carloads)	4.75	@	—
No. 1 S. C. (carloads)	6.65	@	—
No. 3 S. C. (carloads)	6.20	@	—
No. 4 S. C. (carloads)	5.20	@	—
No. 1 Coated and Litho	12.00	@	—
No. 2 Coated and Litho	10.50	@	—
No. 3 Coated and Litho	9.50	@	—
Coated tinted	14.00	@	—
Wrapping—			
Rag Brown	4.25	@	—
White Wrap	2.22½	@	—
"B" Manila	4.75	@	—
No. 1 Manila	5.25	@	—
Fiber	5.25	@	—
Kraft, M. F.	5.75	@	—
Kraft No. 2	5.25	@	—

(F.O.B. Cars Toronto)

News, per ton—			
Rolls (contract)	45.50	@	—
Sheets	50.50	@	—

Pulp

(F. o. b. Mill)

Ground Wood	18.00	@	20.00
Sulphite easy bleaching	40.00	@	—
Sulphite, news grade	38.00	@	—
Sulphite, bleached	50.00	@	55.00
Sulphate	50.00	@	—

Old Waste Paper

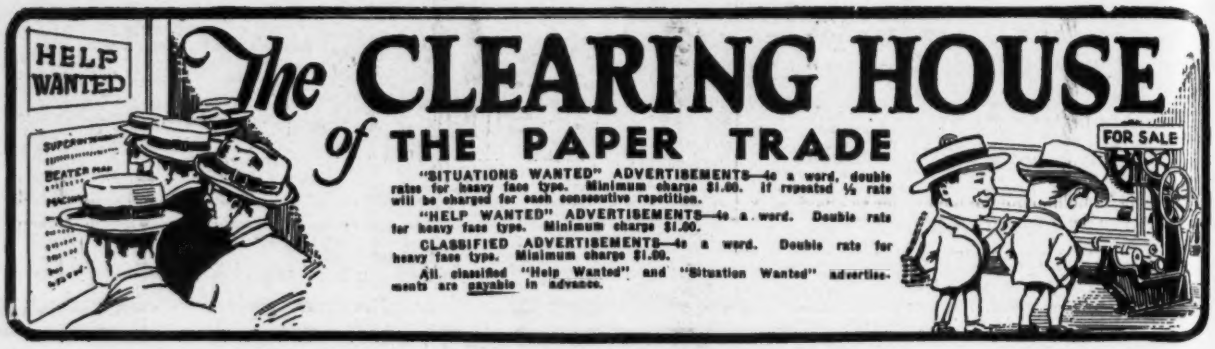
(In carload lots, f. o. b. Toronto)

Shavings—			
White Env. Cut	2.00	@	2.30
Soft White	1.60	@	1.90
White Blk. News	1.25	@	1.40
Book and Ledger—			
Flat Magazine and Book Stock (old)	.90	@	1.00
Light and Crumpled Book Stock	.80	@	.90
Ledgers and Writings	1.00	@	1.05
Manilas—			
New Manila Cut	1.25	@	1.50
Printed Manilas	.70	@	.60
Kraft	1.25	@	1.50
News and Scrap—			
Strictly Overissue	.80	@	—
Strictly Folded	.60	@	—
No. 1 Mixed Paper	.50	@	—

Domestic Rags

(Price to mills, f. o. b. Toronto)

No. 1 White Shirt Cuttings	.06	@	.06¼
Fancy Shirt Cuttings	.02¼	@	.02½



The CLEARING HOUSE of THE PAPER TRADE

"SITUATIONS WANTED" ADVERTISEMENTS—4c a word, double rates for heavy face type. Minimum charge $1.00. If repeated ½ rate will be charged for each consecutive repetition.

"HELP WANTED" ADVERTISEMENTS—4c a word. Double rate for heavy face type. Minimum charge $1.00.

CLASSIFIED ADVERTISEMENTS—4c a word. Double rate for heavy face type. Minimum charge $1.00.

All classified "Help Wanted" and "Situation Wanted" advertisements are payable in advance.

HELP WANTED

SALARIED POSITIONS. $2,500 to $25,000. This thoroughly organized advertising service of 24 years' recognized standing and reputation carries on preliminary negotiations for positions of the calibre indicated, through a procedure individualized to each client's personal requirements. Several weeks are required to negotiate and each individual must finance the moderate cost of his own campaign. Retaining fee protected by a refund provision as stipulated in our agreement. Identity is covered and, if employed, present position protected. If you have actually earned over $2,500, send only name and address for details. R. W. Bixby, Inc., 117 Delward Bldg., Buffalo, N. Y.

GENERAL superintendent wanted by well established successful company. Last man on job ten years.

First preference given to man who has been superintendent or assistant and has reasonable fund of information on general manufacturing of paper.

Would prefer a man who has been on present job a number of years and who has intelligence, initiative, even temperament and good judgment. This is an opportunity for the man with high qualities of character and ability who perhaps is justified in considering a bigger job than he has.

In answering state in full particulars that a prospective employer would be interested in. Address Box 34-316, care Paper Trade Journal. A-30

WANTED—Experienced sulphate recovery room foreman. Preferably with technical education. Reply "Modern," Box 34-378, care Paper Trade Journal. S-6

SITUATIONS WANTED

EXPERIENCED COARSE PAPER MAN—Manager, buyer, wholesale salesman, familiar Toilet Paper, Napkins, Bags, Wrapping, desirous worth while connection. Prefer managing or buying. Address Box 33-327, care Paper Trade Journal. A-30

CHEMICAL ENGINEER—Four years' laboratory research experience in pulp including high alpha, paper and allied lines. Solved number of important problems. Four years' experience as plant chemist in two large plants. Increased production in each about one third, decreased costs, and improved product. Personal correspondence solicited. Address Box 34-377, care Paper Trade Journal. A-30

WANTED—Position as SUPERINTENDENT or TOUR BOSS. Would consider running with advancement, any type machine. All papers. Address Box 34-366, care Paper Trade Journal. A-30

CYLINDER MACHINE TENDER wants position. 20 years' experience on Combination-board, Specialties and Container-liner. Can furnish first class references. Address Box 34-380, care Paper Trade Journal. S-27

BRANCH MANAGER desires connection selling the mills. Thoroughly experienced in technical and practical papermaking. Can work with mill men, superintendents and executives, demonstrate and sell. Address Box 34-379, care Paper Trade Journal. A-30

SITUATIONS WANTED

CHEMICAL ENGINEER, TECHNICAL SALES, OR ASSISTANT SUPERINTENDENT—Age 40. Experience; twelve years actual pulp and paper manufacture, nine years in charge of development electrical insulating and converting papers also writing Purchasing Department Specifications for these papers. Especially experienced in technical control of the manufacture of absorbent, filter, blotting and converting papers. Good references. Active member of TAPPI since 1924. Location immaterial. Address Box 34-365, care Paper Trade Journal. A-30

BOARD MILL SUPERINTENDENT — 45 years old. Married. 25 years experience all grades folding box and specialties. Production quality and mill maintenance guaranteed. Address Box 34-283, care Paper Trade Journal. S-27

WANTED

EUROPEAN Coating Mill, supplying specialties in Flint Papers, Leatherette Papers etc., requires well introduced agents for main centres. Please apply, stating references, organization and district covered. Address Box 34-376, care Paper Trade Journal. A-30

WANTED—Good used 60" Universal Type No. 6 Cameron Slitter and Rewinder. Address Box 34-382, care Paper Trade Journal. A-30

WANTED—One Gumming Machine for Kraft Sealing Tape; one Slitter for small rolls gummed paper; also Rag Cutter. Address Box 34-381, care Paper Trade Journal. S-6

WANTED GOOD USED EQUIPMENT—Complete Pulp and Paper Mill, approximately 30 tons 24 hours, Rod Mills, Screw Presses, Kneaders, Wet Machines, Stuff Pumps, Breakers, Beaters 2000 lb., Refiners and other needed equipment. Fourdrinier Paper Machine 96" to 120" trim, state length of wire, number and type presses, calenders, reels, winders and finishing room equipment. Address Box 34-386, care Paper Trade Journal. A-30

MISCELLANEOUS

CLARK MANUFACTURING COMPANY, Holyoke, Mass. Telephone 2-4370. Builders of cylinder moulds, couch and felt rolls, dandy rolls We cover dandies and cylinders tight, for fast running machines. tf

Address Replies

to advertisements appearing under Box Numbers in care of

PAPER TRADE JOURNAL

15 West 47th Street
New York, N. Y.

SITUATIONS WANTED

PURCHASING AGENT with eight years' experience in Paper Industry, Southern Ohio. Also ten years' general office experience and proven ability. Consider any offer with reasonable chance for advancement. Will go anywhere. Address Box 34-354, care Paper Trade Journal. S-6

FOR SALE

PAPER COATING MACHINERY—Waxing, Oiling, Gumming, Gluing, Asphalt Duplexing Laboratory Coating and Treating machines. High speed. New improvement. MAYER COATING MACHINES COMPANY, INC., Rochester, N. Y. T.F.

FOR SALE—Good little Tissue or Specialty Mill in New England. Can be had on reasonable price and terms. Immediate possession. Address Box 34-383, care Paper Trade Journal. A-30

FOR SALE—Two E. D. Jones cypress wood tub 1,000 lb. beaters. One 4" and one 5" Post Stuff Pumps. One No. 1 Nash Hytor Vacuum Pump. Single Cylinder Paper Machine, press part rolls 58" face, six dryers 36" in diameter x 56½" face complete with single deck frames, gears, syphons, drive, etc.; 5 roll Stack Calenders 54½" face rolls. Will sell separately. Very reasonable prices. Address Box 34-384, care Paper Trade Journal. A-30

FOR SALE or TO LEASE under royalty agreement, process for manufacture of formed paper articles covered by United States Patent No. 1904268 and other patents pending for treating formed paper articles. Address P. O. Box 113, Plattsburgh, N. Y. A-30

FOR SALE—54" Seybold Twentieth Century Mill Trimmer rebuilt and guaranteed. Address Box 34-117, care Paper Trade Journal. A-30

FOR SALE—One Hudson Sharp Machine Co.'s No. 3 Adjustable Twin Napkin Folder. Will fold one quarter fold napkins from 13½" to 18" square. Complete and in good operating condition. Reasonable price, immediate delivery. Address Box 34-385, care Paper Trade Journal. A-30

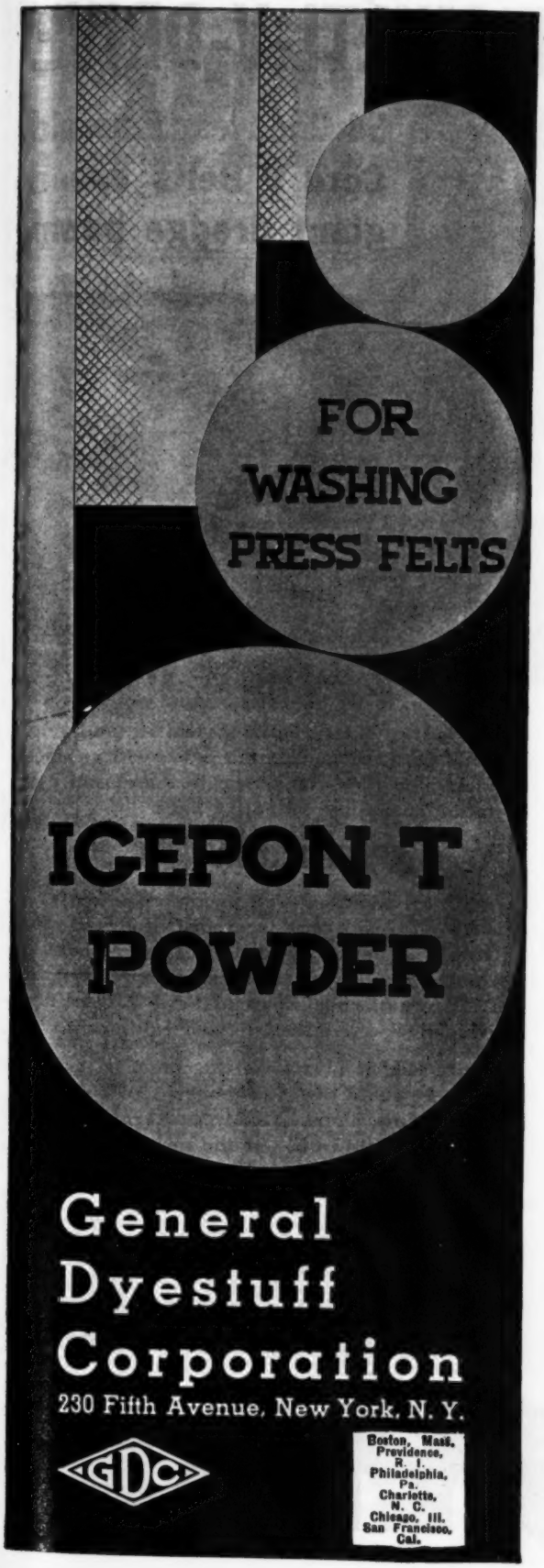
FOR SALE—96" Cylinder Paper Machine having cylinder 96" x 36". Two sets presses 20" x 94". 20 dryers 92" x 36". Two stacks calenders 7 rolls each. Reel and Winders. Marshall Drive. 2—1500 lb. Iron Tub Beaters. 2—Number 2 Emersons, Two Pony Jordans. Two 10" Triplex Stuff Pumps. Two 10 Plate Packard Screens. One 8" Cen. water pump. Weinstock de-inking machine. Address Box 34-388, care Paper Trade Journal. A-30

FOR SALE

New Cylinder Paper Machine—Molds 36" x 91". 4 Baby Presses. 1 Primary Press. 3 Main presses with rolls 20" x 93". 32 Dryers 48" x 88". 2 stacks of calenders Duplex Cutter.

Pusey & Jones Fourdrinier Paper Machine. Wire 104" by 65'. Three sets presses. 30 Dryers 46" by 102". English reel.

FRANK H. DAVIS COMPANY
175 Richdale Ave. Cambridge, Mass.
TF



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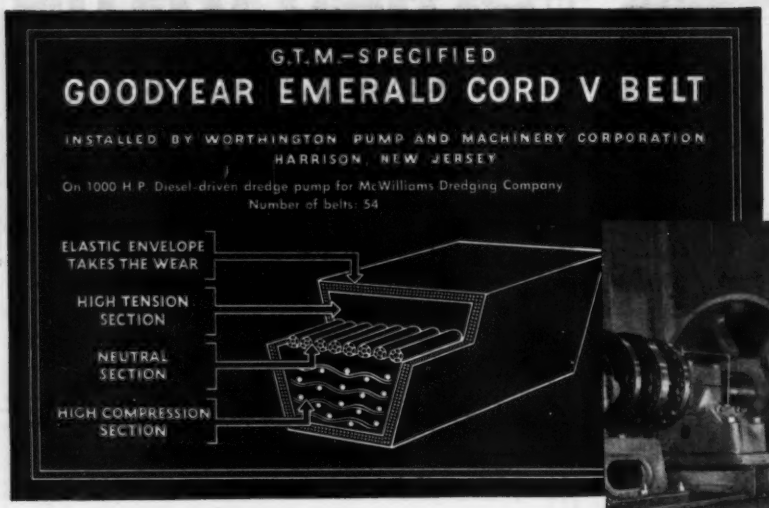
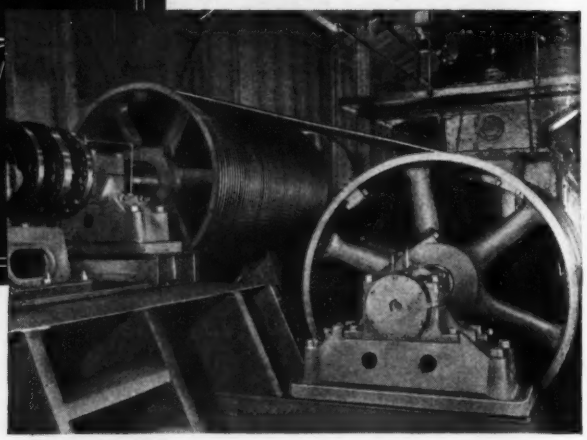
WORLD'S LARGEST MULTI-V-DRIVE


G.T.M.–SPECIFIED
GOODYEAR EMERALD CORD V BELT
INSTALLED BY WORTHINGTON PUMP AND MACHINERY CORPORATION
HARRISON, NEW JERSEY
On 1000 H.P. Diesel-driven dredge pump for McWilliams Dredging Company
Number of belts: 54
ELASTIC ENVELOPE TAKES THE WEAR
HIGH TENSION SECTION
NEUTRAL SECTION
HIGH COMPRESSION SECTION

54 Goodyear Emerald Cord V Belts speed giant dredge pump



Matched construction insures close to 100% power-efficiency

THE practicability of using high-efficiency multiple V drives on heavy duty machinery is demonstrated by the 54-belt giant pictured here, said to be the largest in the world.

It is part of a 1000 H.P. Diesel-driven pump installation, recently made by the Worthington Pump and Machinery Corporation on a huge dredge operated by the McWilliams Dredging Company of Chicago.

Because efficiency, dependability and long life command a special premium in dredge service, the Worthington engineers took no chances. They specified 54 Goodyear Emerald Cord V Belts, 1½" wide, 420" long, as recommended by the G.T.M.—Goodyear Technical Man—for these reasons:

Emerald Cord V Belts are precision built in matched sets, uniform in length and accurate in cross-section —*insuring practically slipless grip!*

The load is carried entirely by a core of high-tensile low-stretch cords, deeply embedded in high quality rubber that neutralizes the forces of tension and compression in flexing over pulleys — *insuring greater strength, long flexing life and high fatigue resistance.*

As a result of this greater flexibility and grip, Emerald Cord V Belts transmit power with an efficiency close to 100%, and permit a uniformity of operation impossible with other belts.

SPECIFIED BY GTM

On many drives where even, maximum power is requisite—on textile machinery; ball, rod and tube mills; clay, heavy saw mill and paper working machinery; crushers, pumps and compressors, the G.T.M. recommends Emerald Cord V Belts and individually specifies them to your equipment.

Why not talk it over with this practical expert. Perhaps he could save you money, too. To get in touch with him, address Goodyear, Akron, Ohio, or Los Angeles, California—or the nearest Goodyear Mechanical Rubber Goods Distributor.

BELTS • MOLDED GOODS
HOSE • PACKING
MADE BY THE MAKERS OF GOODYEAR TIRES

THE GREATEST NAME IN RUBBER

NRA CODE

GOODYEAR